



Federal Science and Engineering Obligations to Universities and Colleges Drop by 6% in FY 2013

by Michael Yamaner¹

In FY 2013, federal agencies obligated \$29 billion to 995 academic institutions for science and engineering (S&E) activities. This represents a 6% decrease in current dollars from the \$31 billion obligated to 1,073 academic institutions in FY 2012. This is the third year in a row of declining S&E funding to academic institutions. These statistics are from the Survey of Federal Science and Engineering

Support to Universities, Colleges, and Nonprofit Institutions from the National Science Foundation, National Center for Science and Engineering Statistics (NSF, NCSES).

After adjustment for inflation, federal S&E obligations to academic institutions declined by \$1 billion (4%) from FY 2011 to FY 2012 and declined by \$2 billion (7%) between FY 2012 and

FY 2013 (table 1). For the remainder of this InfoBrief, unless otherwise noted, amounts for FY 2013 obligations are in current dollars and changes in funding across years are in inflation-adjusted constant dollars.

Categories of Academic S&E Support

Federal academic S&E obligations include six categories: research and

TABLE 1. Federal academic science and engineering obligations, by activity: FY 2011–13

Fiscal year	All federal obligations	Research and development	R&D plant	Facilities and equipment for instruction in S&E	Fellowships, traineeships, and training grants	General support for S&E	Other S&E activities
				Current \$millions			
2011	31,460	27,971	323	4	1,014	208	1,941
2012	30,848	27,419	424	4	913	141	1,947
2013	29,034	25,869	246	4	892	132	1,891
Constant FY 2009 \$millions							
2011	30,591	27,199	314	4	986	202	1,887
2012	29,480	26,203	405	4	873	135	1,861
2013	27,334	24,354	232	4	840	124	1,780

S&E = science and engineering.

NOTES: Gross domestic product implicit price deflators were used to convert current to constant dollars. Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, FY 2013.

development (89% of total federal academic S&E obligations annually over the past 3 years); R&D plant; facilities and equipment for instruction in S&E; fellowships, traineeships, and training grants; general support for S&E; and other S&E activities (table 1).

Federal academic R&D obligations decreased by \$2 billion (7%) between FY 2012 and FY 2013. Four of the five remaining categories showed decreased funding in FY 2013 with R&D plant being the second largest decrease (\$173 million, or 43%) and other S&E activities being the third largest decrease (\$81 million, or 4%). Facilities and equipment for instruction in S&E remained unchanged (\$4 million in FY 2013) (table 1).

Agency Sources for Academic S&E Support

Collectively, the Department of Health and Human Services (HHS), NSF, and the Department of Defense (DOD) provided 87% of all federally funded academic S&E obligations in FY 2013. Of these agencies, HHS accounted for 58% of all federally funded obligations; NSF, 17%; and DOD, 12%. The Department of Agriculture (USDA), Department of Energy (DOE), and the National Aeronautics and Space Administration (NASA) provided most of the remaining academic S&E total (11%). Of the six agencies, only DOE showed increased obligations for academic S&E between FY 2012 and FY 2013 (table 2).

University Shares of Academic S&E Support

The Johns Hopkins University (including its Applied Physics Laboratory) continued to be the leading academic recipient of federal S&E obligations: \$1.5 billion in FY 2013. DOD provided Johns Hopkins with

TABLE 2. Federal academic science and engineering obligations, by agency in FY 2013 rank order: FY 2011–13

Fiscal year	All agencies							Other agencies ^a
	HHS	NSF	DOD	USDA	DOE	NASA		
Current \$millions								
2011	31,460	18,164	5,113	3,923	1,449	1,160	592	1,059
2012	30,848	17,904	5,114	3,637	1,220	1,018	971	985
2013	29,034	16,839	4,911	3,365	1,136	1,054	884	847
Constant FY 2009 \$millions								
2011	30,591	17,662	4,972	3,815	1,409	1,128	576	1,030
2012	29,480	17,110	4,887	3,476	1,166	973	928	941
2013	27,334	15,853	4,623	3,168	1,069	992	832	797

DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = U.S. Department of Agriculture.

^a Includes data for the Departments of Commerce, Education, Homeland Security, Housing and Urban Development, the Interior, Labor, and Transportation; Agency for International Development; Environmental Protection Agency; Appalachian Regional Commission; Nuclear Regulatory Commission; Office of Justice Programs (part of Department of Justice); and Social Security Administration.

NOTES: Gross domestic product implicit price deflators were used to convert current to constant dollars. Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, FY 2013.

the largest share of federal S&E funds (47% of its FY 2013 total). The leading 20 universities, ranked in terms of federal academic S&E obligations, accounted for 37% of the FY 2013 federal total. Of these universities, 19 were also ranked among the top 20 recipients in FY 2012. In FY 2013, Pennsylvania State University's rank fell from 14th to 18th and the University of Colorado's rank rose from 16th to 13th. Vanderbilt University moved from 21st to 20th by trading places with Washington University, St. Louis in FY 2013 (table 3).

Federal S&E Support to Nonprofit Institutions

NSF collects statistics on federal obligations to independent nonprofit institutions for two of the six S&E cate-

gories: R&D and R&D plant. During FY 2013 federal agencies obligated \$6.6 billion to 1,068 nonprofit institutions, a decrease of 2% from the \$6.8 billion reported in FY 2012 (current dollars). HHS accounted for the largest decrease in funding (\$319 million in current dollars). MITRE Corporation received the most federal R&D and R&D plant funds (\$485 million) among nonprofits in FY 2013, with DOD providing 99.9% of this funding (table 4).

In FY 2013, the 10 leading nonprofit institutions in terms of federal S&E funds received 36% of the total funding to all nonprofits. Five of these recipients were hospitals or medical research institutes, and 7 of these leading 10 nonprofits in FY 2013 also ranked among the top 10 in the prior year.

TABLE 3. Federal academic science and engineering obligations to the 20 universities and colleges receiving the largest amounts, by agency: FY 2013
(Current dollars in thousands)

Institution	All federal obligations	HHS	NSF	DOD	USDA	DOE	NASA	Other agencies ^a
All institutions	29,034,304	16,838,744	4,910,561	3,365,151	1,135,530	1,054,056	883,557	846,705
Top 20 institutions	10,628,130	6,976,456	1,090,495	1,698,447	99,247	233,070	338,315	192,100
Johns Hopkins U. ^b	1,538,503	603,534	38,369	720,040	0	4,497	158,349	13,714
U. WA	662,921	448,691	87,701	64,050	10,558	20,339	10,929	20,653
U. MI	609,859	418,803	86,483	39,862	1,362	20,509	21,838	21,003
U. CA, San Francisco	573,638	536,012	4,768	31,426	0	164	349	920
U. CA, San Diego	565,551	368,754	97,723	59,290	560	13,314	7,424	18,486
U. PA	540,124	458,366	36,587	33,779	1,128	6,578	2,279	1,407
Stanford U.	495,617	360,830	46,071	54,587	83	12,624	17,105	4,318
U. CA, Los Angeles	481,135	348,876	64,123	32,489	350	19,377	12,702	3,218
Columbia U. in the City of New York	477,051	346,117	77,772	24,615	0	9,503	14,972	4,072
U. Pittsburgh	465,625	413,396	25,140	20,018	0	3,274	321	3,477
Harvard U.	458,700	357,432	49,716	33,592	492	6,888	8,111	2,470
Duke U.	454,284	354,707	39,868	36,834	88	7,912	2,657	12,219
U. CO	448,387	237,170	70,791	23,503	271	12,032	56,775	47,845
U. NC, Chapel Hill	441,717	394,829	28,217	10,576	65	3,405	88	4,537
U. WI, Madison	440,354	248,602	96,254	17,364	25,634	48,493	0	4,007
Yale U.	412,470	354,527	25,489	20,975	0	8,947	2,488	45
U. MN	410,566	276,838	70,223	10,756	28,888	11,240	3,560	9,062
PA State U.	392,832	108,154	57,702	167,835	29,228	11,561	9,449	8,903
GA Institute of Technology	385,230	22,689	66,911	272,210	50	5,960	8,552	8,859
Vanderbilt U.	373,566	318,131	20,590	24,649	492	6,452	369	2,884
All other academic institutions	18,406,174	9,862,289	3,820,066	1,666,704	1,036,283	820,986	545,242	654,605

DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = U.S. Department of Agriculture.

^a Includes data for the Departments of Commerce, Education, Homeland Security, Housing and Urban Development, the Interior, Labor, and Transportation; Agency for International Development; Environmental Protection Agency; Appalachian Regional Commission; Nuclear Regulatory Commission; Office of Justice Programs (part of Department of Justice); and Social Security Administration.

^b Includes funding for Applied Physics Laboratory.

NOTE: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, FY 2013.

Several nonprofits moved into the top 10: the Association of Universities for Research in Astronomy (ranked 30th in FY 2012 and 6th in FY 2013), the RAND Corporation (ranked 18th in FY 2012 and 9th in FY 2013), and Boston Children's Hospital (ranked 13th in FY 2012 and 10th in FY 2013). And several nonprofits fell out

of the top 10: The Henry M. Jackson Foundation for the Advancement of Military Medicine (ranked 7th in FY 2012 and 16th in FY 2013), the Southwest Research Institute (ranked 9th in FY 2012 and 19th in FY 2013), and Beth Israel Deaconess Medical Center (ranked 10th in FY 2012 and 11th in FY 2013) (table 4).

Data Sources, Limitations, and Availability

Gross domestic product implicit price deflators were used to convert current to constant dollars in this InfoBrief. The data on federal S&E obligations to academic and nonprofit institutions presented here were obtained from 18 agencies that responded to the FY

TABLE 4. Federal research and development and R&D plant obligations to the 10 independent nonprofit institutions receiving the largest amounts, by agency: FY 2013
(Current dollars in thousands)

Institution	All federal obligations	HHS	DOD	NSF	NASA	DOE	Other agencies ^a
All nonprofit institutions	6,609,871	4,078,897	1,248,186	521,463	356,397	174,901	230,028
Top 10 nonprofit institutions	2,370,608	1,264,556	839,700	111,922	103,638	32,513	18,278
MITRE Corp.	484,866	0	484,396	0	0	300	169
MA General Hospital	322,162	319,362	2,429	350	21	0	0
Brigham and Women's Hospital	316,601	313,428	2,124	221	571	0	257
Mayo Clinic	215,629	209,817	4,845	487	0	0	481
Battelle Memorial Institute	190,090	36,857	121,702	0	0	27,106	4,425
Association of Universities for Research in Astronomy	187,621	0	0	84,575	103,047	0	0
Fred Hutchinson Cancer Research Ctr.	182,821	181,426	0	1,395	0	0	0
SRI International	178,903	45,045	93,077	23,795	0	5,107	11,879
RAND Corp.	167,138	35,188	130,883	0	0	0	1,067
Boston Children's Hospital	124,777	123,433	245	1,100	0	0	0
All other nonprofit institutions	4,239,264	2,814,341	408,486	409,540	252,759	142,388	211,750

DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation.

^a Includes data for the Departments of Commerce, Education, Homeland Security, Housing and Urban Development, the Interior, Labor, and Transportation; Agency for International Development; Environmental Protection Agency; Appalachian Regional Commission; Nuclear Regulatory Commission; Office of Justice Programs (part of Department of Justice); and Social Security Administration.

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SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, FY 2013.

2013 Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (Federal S&E Support Survey). The Federal S&E Support Survey collects federal S&E support data by funding agency, institution, type of activity, type of institution, and geographic location.

The six funding categories of federal S&E support are defined as follows:

- *Research and development* includes all direct, indirect, incidental, or related costs resulting from or necessary to perform R&D by private individuals and organiza-

tions under grant, contract, or cooperative agreement.

- *R&D plant* includes all projects whose principal purpose is to provide support for construction, acquisition, renovation, modification, repair, or rental of facilities, land, works, or fixed equipment for use in scientific or engineering R&D.
- *Facilities and equipment for S&E instruction* include all programs whose principal purpose is to provide support for construction, acquisition, renovation, modification, repair, or rental of facilities, land, works, or equipment for use in instruction in S&E.

- *Fellowships, traineeships, and training grants* include all fellowship, traineeship, and training grant programs that are directed primarily toward the development and maintenance of the scientific workforce.
- *General support for S&E* includes funds used for scientific projects and support for activities within a specified discipline; explicit purpose is not specified.
- *Other S&E activities* include all academic S&E obligations that cannot be assigned elsewhere and activities in support of technical conferences, teacher institutes, and

programs aimed at increasing precollege and undergraduate students' scientific knowledge.

The full set of detailed statistical tables on the FY 2013 Survey of Federal Science and Engineering

Support to Universities, Colleges, and Nonprofit Institutions will be available online at <http://nsf.gov/statistics/fedsupport/>. Individual tables may be available in advance of the full report. For more information, please contact the author.

Note

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