

## 資料 3 - 2

### 米国の研究開発資金について (前回の追加資料)

2002年4月23日

# 1. 米国政府の基礎研究に対する研究開発投資

米国政府の基礎研究に対する研究開発投資（1998）は、表1のように\$20,235Mで米国全体の基礎研究開発投資の53%であった。

表1. 分野別の米国研究開発投資

U.S. R&D expenditures, by performing sector, source of funds, and character of work: 1998  
(Millions of U.S. dollars)

Character of work/ sources of funds	Performer						Percent distribution by sources
	Federal Government	Industry <sup>a</sup>	Universities and colleges	U&C associated FFRDCs <sup>b</sup>	Other nonprofit institutions <sup>a</sup>	Total	
<b>TOTAL R&amp;D</b>							
Federal Government	17,189	24,589	15,558	5,517	4,077	66,930	29.5%
Industry	..	146,706	1,896	..	1,051	149,653	65.9%
Universities and colleges	..	..	7,049	..	..	7,049	3.1%
Other nonprofit institutions	..	..	1,840	..	1,702	3,541	1.6%
Total	17,189	171,295	26,343	5,517	6,830	227,173	100.0%
Percent distribution, performers	7.6%	75.4%	11.6%	2.4%	3.0%	100.0%	
<b>BASIC RESEARCH</b>							
Federal Government	2,920	1,816	11,248	2,721	1,531	20,235	53.4%
Industry	..	9,625	1,205	..	483	11,313	29.9%
Universities and colleges	..	..	4,479	..	..	4,479	11.8%
Other nonprofit institutions	..	..	1,169	..	681	1,850	4.9%
Total	2,920	11,441	18,100	2,721	2,695	37,877	100.0%
Percent distribution, performers	7.7%	30.2%	47.8%	7.2%	7.1%	100.0%	
<b>APPLIED RESEARCH</b>							
Federal Government	5,421	3,087	3,130	1,545	1,144	14,326	28.0%
Industry	..	32,701	567	..	357	33,625	65.6%
Universities and colleges	..	..	2,107	..	..	2,107	4.1%
Other nonprofit institutions	..	..	550	..	613	1,163	2.3%
Total	5,421	35,788	6,354	1,545	2,114	51,221	100.0%
Percent distribution, performers	10.6%	69.9%	12.4%	3.0%	4.1%	100.0%	
<b>DEVELOPMENT</b>							
Federal Government	8,848	19,686	1,181	1,251	1,403	32,369	23.4%
Industry	..	104,380	121	..	210	104,715	75.8%
Universities and colleges	..	..	463	..	..	463	0.3%
Other nonprofit institutions	..	..	121	..	408	529	0.4%
Total	8,848	124,066	1,888	1,251	2,021	138,075	100.0%
Percent distribution, performers	6.4%	89.9%	1.4%	0.9%	1.5%	100.0%	

FFRDC = Federally Funded Research and Development Center

NOTE: State and local government funds are included in industry funds reported to industry performers, and in university and college funds reported to university and college performers. Details may not add to totals because of rounding.

<sup>a</sup>Expenditures for FFRDCs administered by both industry and nonprofit institutions are included in the totals of their respective sectors. They are estimated to account for less than 2 percent and 12 percent, respectively, of the industry and nonprofit institutions performance totals. FFRDCs are organizations exclusively or substantially financed by the Federal Government to meet a particular requirement or to provide major facilities for research and training purposes.

<sup>b</sup>FFRDCs administered by individual universities and colleges and by university consortia.

See appendix tables 2-3, 2-7, 2-11, and 2-15.

このうち、大学等への投資が \$ 13,969M ( 69 % ) 民間(産業界)への投資が \$ 1,816M ( 9 % ) その他N P O等への投資が \$ 1,531M ( 8 % ) であった。従って、大学への投資が基礎研究では明らかに多いが、一部は民間企業へも投資されている。

(参考)

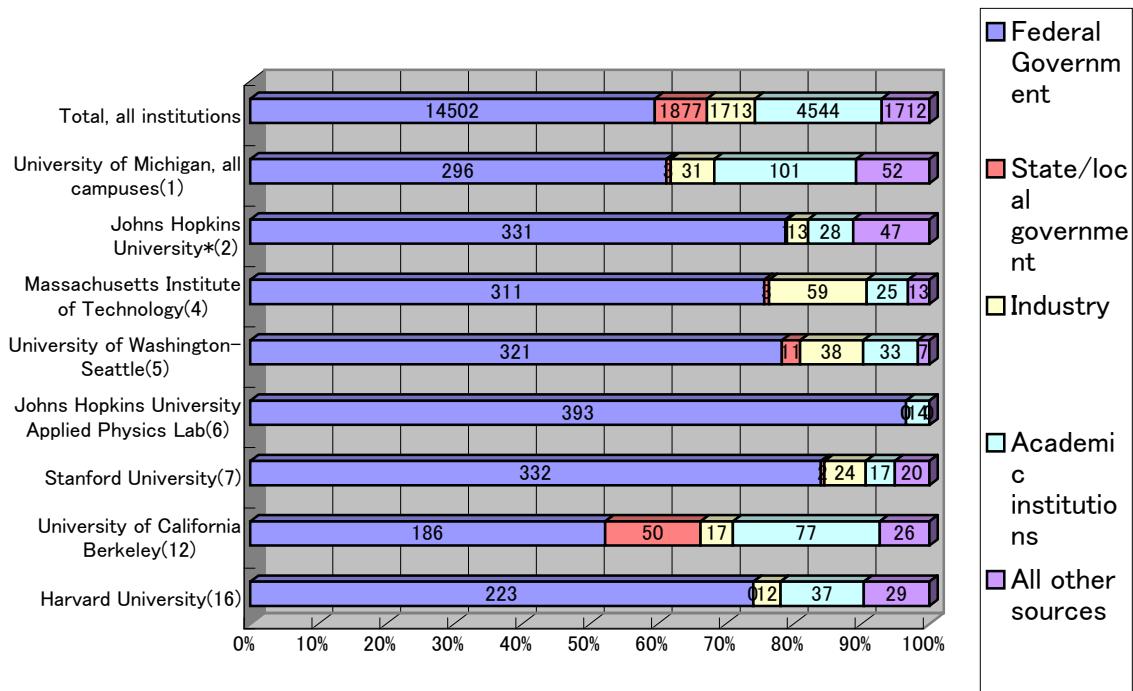
## 米国 ARO(Army Research Office)について

For 50 years ARO has enhanced the Army's capabilities through scientific research. ARO selects and funds basic research proposals from educational institutions, nonprofit organizations and private industry.

( 50 年の間、 ARO は科学研究を通じて米国陸軍の能力を向上させてきた。 ARO は、教育機関、非営利組織、民間企業からの基礎研究のプロポーザルを選択し、資金提供してきた。 )

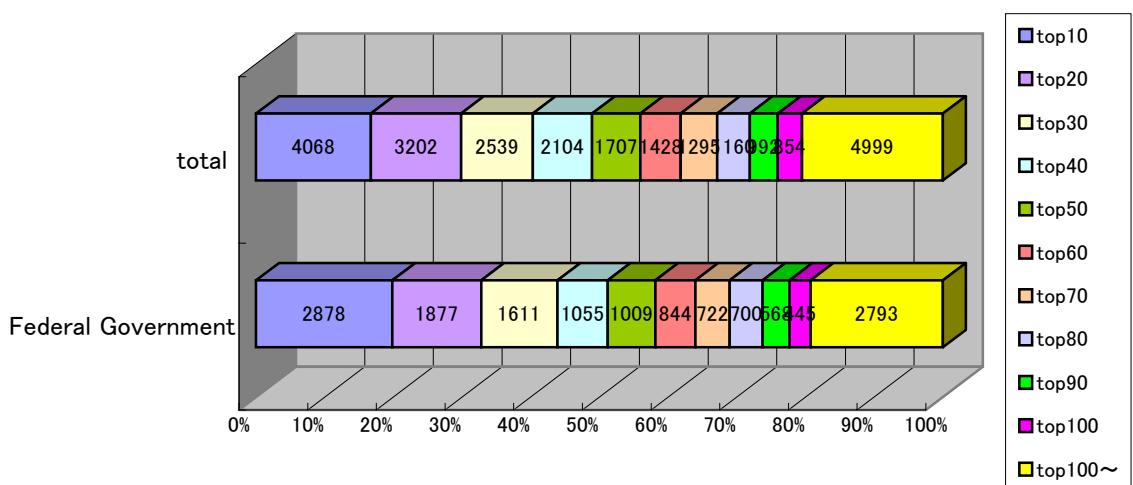
(参考) "50 Years of Army Research"(2001)

## 2. R&D資金の財源別割合について



\* These figures exclude the Applied Physics Laboratory(APL) at Johns Hopkins University, which is similar to a federal-funded research and development center and dominates the R&D performed at the university. APL is included as a separate entry in the table.

## 3. 全体に占めるtop10～100の割合について



R&D expenditures at the top 100 academic institutions, by source of funds 1997 (別紙)より作成

## 4. 米国におけるR & D 資金獲得上位100機関

Appendix table 6-4.

R&D expenditures at the top 100 academic institutions, by source of funds: 1997  
(Millions of current dollars)

Rank and academic institution	Institution type	Total	Source of funds				
			Federal Government	State/local government	Industry	Academic institutions	All other sources
Total, all institutions		24,348	14,502	1,877	1,713	4,544	1,712
1 University of Michigan, all campuses .....	Public	483	296	3	31	101	52
2 Johns Hopkins University.....	Private	421	331	1	13	28	47
3 University of Wisconsin-Madison .....	Public	420	234	37	15	88	47
4 Massachusetts Institute of Technology .....	Private	411	311	3	59	25	13
5 University of Washington-Seattle .....	Public	410	321	11	38	33	7
6 Johns Hopkins University Applied Physics Lab ...	Private	408	393	0	0	14	0
7 Stanford University .....	Private	395	332	2	24	17	20
8 University of California-San Diego .....	Public	378	275	14	19	36	34
9 University of California-Los Angeles .....	Public	375	239	9	20	57	50
10 Texas A&M University, all campuses .....	Public	367	145	84	32	101	5
Total, top 10 institutions		4,068	2,878	163	252	501	275
11 University of Minnesota, all campuses .....	Public	363	200	51	24	54	34
12 University of California-Berkeley .....	Public	357	186	50	17	77	26
13 Cornell University, all campuses .....	Private	351	206	37	8	70	31
14 Pennsylvania State University, all campuses .....	Public	340	185	12	57	86	0
15 University of California-San Francisco .....	Public	334	229	13	22	36	33
16 Harvard University .....	Private	300	223	*	12	37	29
17 University of Pennsylvania.....	Private	296	217	4	19	26	30
18 Ohio State University, all campuses .....	Public	289	123	48	37	60	22
19 University of Illinois at Urbana-Champaign .....	Public	286	156	37	12	68	14
20 University of Arizona .....	Public	285	152	7	15	101	10
Total, top 20 institutions		7,270	4,755	421	474	1,117	503
21 University of Florida .....	Public	271	94	66	24	78	9
22 University of Colorado, all campuses .....	Public	270	192	5	9	27	36
23 Washington University .....	Private	262	187	4	21	27	23
24 University of Southern California .....	Private	259	192	6	22	40	0
25 University of California-Davis .....	Public	255	124	17	9	84	21
26 Duke University .....	Private	252	156	6	48	18	24
27 Yale University .....	Private	246	189	1	17	15	24
28 Columbia University in the City of New York .....	Private	244	212	3	2	0	28
29 Georgia Institute of Technology, all campuses .....	Public	240	113	12	48	68	0
30 University of Texas at Austin .....	Public	239	152	18	30	34	5
Total, top 30 institutions		9,809	6,366	559	704	1,508	673
31 North Carolina State University at Raleigh .....	Public	229	69	78	27	54	1
32 University of Georgia .....	Public	225	54	42	10	118	*
33 University of North Carolina at Chapel Hill .....	Public	221	154	31	3	33	0
34 University of Maryland at College Park .....	Public	216	103	52	5	39	17
35 Purdue University, all campuses .....	Public	207	92	22	26	67	*
36 Louisiana State University, all campuses .....	Public	205	65	69	13	46	12
37 University of Alabama at Birmingham .....	Public	204	151	1	16	22	14
38 University of Pittsburgh, all campuses .....	Public	203	161	1	10	16	15
39 Northwestern University .....	Private	201	108	3	10	57	21
40 Baylor College of Medicine .....	Private	193	98	4	14	25	52
Total, top 40 institutions		11,913	7,421	861	840	1,985	805

See explanatory notes, if any, and SOURCE at end of table.

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R&D expenditures at the top 100 academic institutions, by source of funds: 1997  
(Millions of current dollars)

Rank and academic institution	Institution type	Total	Source of funds			
			Federal government	State/ local government	Industry	Academic institutions
41 Michigan State University .....	Public	190	83	33	7	58
42 University of Iowa .....	Public	184	109	6	16	41
43 Rutgers the State Univ of NJ, all campuses .....	Public	183	68	23	9	71
44 California Institute of Technology .....	Private	178	164	1	4	7
45 Virginia Polytechnic Institute and State University	Public	170	88	33	11	34
46 Indiana University, all campuses .....	Public	165	96	2	4	43
47 Emory University .....	Private	164	109	5	7	23
48 Case Western Reserve University .....	Private	162	121	6	6	14
49 Iowa State University .....	Public	155	53	47	8	42
50 University of Rochester .....	Private	155	118	9	14	5
<b>Total, top 50 institutions</b>		<b>13,620</b>	<b>8,430</b>	<b>1,026</b>	<b>926</b>	<b>2,322</b>
51 University of Tennessee Univ-Wide Adm Cent Off ....	Public	154	74	28	13	29
52 New York University .....	Private	153	94	1	9	20
53 University of Chicago .....	Private	151	122	*	2	10
54 University of Cincinnati, all campuses .....	Public	142	78	2	23	31
55 University of Connecticut, all campuses .....	Public	141	50	12	9	60
56 University of Texas Southwestern Med Ctr Dallas	Public	141	89	7	13	1
57 University of Illinois at Chicago .....	Public	139	71	3	7	49
58 SUNY at Stony Brook, all campuses .....	Public	137	87	3	7	33
59 University of Miami .....	Private	136	102	2	12	7
60 SUNY at Buffalo, all campuses .....	Public	136	78	5	14	24
<b>Total, top 60 institutions</b>		<b>15,048</b>	<b>9,274</b>	<b>1,089</b>	<b>1,034</b>	<b>2,575</b>
61 Carnegie Mellon University .....	Private	135	92	10	18	7
62 University of Maryland at Baltimore .....	Public	135	72	18	19	13
63 University of Missouri, Columbia .....	Public	132	36	18	8	64
64 Oregon State University .....	Public	131	80	28	*	15
65 University of Utah .....	Public	131	99	*	10	16
66 University of Texas MD Anderson Cancer Center ....	Public	130	50	0	0	48
67 Colorado State University .....	Public	129	79	21	6	22
68 University of Kentucky, all campuses .....	Public	125	62	7	11	42
69 Wayne State University .....	Public	124	54	11	11	37
70 Vanderbilt University .....	Private	123	99	*	3	12
<b>Total, top 70 institutions</b>		<b>16,343</b>	<b>9,996</b>	<b>1,201</b>	<b>1,120</b>	<b>2,850</b>
71 Boston University .....	Private	120	98	1	9	0
72 University of Hawaii at Manoa .....	Public	120	72	28	6	13
73 Georgetown University .....	Private	119	84	*	8	18
74 University of Nebraska at Lincoln .....	Public	117	41	39	5	31
75 University of New Mexico, all campuses .....	Public	116	77	2	3	30
76 Princeton University .....	Private	115	70	*	4	27
77 University of Oklahoma, all campuses .....	Public	114	46	15	7	34
78 University of Virginia, all campuses .....	Public	114	82	4	8	9
79 University of California-Irvine .....	Public	113	71	3	10	15
80 University of Medicine and Dentistry of New Jersey ..	Public	110	57	7	9	28
<b>Total, top 80 institutions</b>		<b>17,503</b>	<b>10,696</b>	<b>1,301</b>	<b>1,188</b>	<b>3,057</b>
						<b>1,256</b>

See explanatory notes, if any, and SOURCE at end of table.

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**Appendix table 6-4.**  
**R&D expenditures at the top 100 academic institutions, by source of funds: 1997**  
(Millions of current dollars)

Rank and academic institution	Institution type	Total	Source of funds				
			Federal Government	State/local government	Industry	Academic Institutions	All other sources
81 Rockefeller University .....	Private	110	44	2	3	30	32
82 University of Kansas, all campuses.....	Public	109	47	10	8	38	6
83 University of South Florida .....	Public	100	31	8	4	50	7
84 Oregon Health Sciences University .....	Public	98	69	3	7	13	6
85 Washington State University .....	Public	98	45	3	3	36	10
86 Yeshiva University .....	Private	97	78	0	0	16	2
87 Florida State University .....	Public	96	53	2	1	36	5
88 University of Texas Hlth Sci Ctr Houston .....	Public	96	67	*	10	6	12
89 University of California-Santa Barbara .....	Public	95	74	2	3	9	6
90 Mount Sinai School of Medicine .....	Private	95	61	3	7	12	13
<b>Total, top 90 institutions</b>		<b>18,495</b>	<b>11,264</b>	<b>1,334</b>	<b>1,234</b>	<b>3,303</b>	<b>1,355</b>
91 Utah State University .....	Public	91	50	17	3	19	2
92 Tulane University .....	Private	86	50	2	13	18	4
93 University of Texas Hlth Sci Ctr San Antonio .....	Public	86	53	7	9	11	5
94 University of Massachusetts at Amherst .....	Public	86	41	7	6	26	7
95 Allegheny University of the Health Sciences .....	Private	86	48	9	9	15	5
96 Auburn University, all campuses .....	Public	85	27	*	5	49	4
97 Mississippi State University .....	Public	84	35	25	5	10	9
98 Clemson University .....	Public	84	28	16	5	30	5
99 Tufts University .....	Private	84	55	*	5	15	7
100 New Mexico State University, all campuses .....	Public	81	57	11	2	8	2
<b>Total, top 100 institutions</b>		<b>19,349</b>	<b>11,709</b>	<b>1,428</b>	<b>1,297</b>	<b>3,503</b>	<b>1,404</b>

\* = less than \$1 million

<sup>a</sup>These figures exclude the Applied Physics Laboratory (APL) at Johns Hopkins University, which is similar to a federally-funded research and development center and dominates the R&D performed at the university. APL is included as a separate entry in the table.

See figure 6-4 in Volume 1.

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