

Appendix table 5-53

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**U.S. patent citations to S&E articles, by field and sector: 1995–2002**

(Percent distribution)

Field and sector	1995	1996	1997	1998	1999	2000	2001	2002
All fields (number of articles).....	16,105	22,780	31,570	43,339	41,232	38,360	41,475	38,392
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	58.3	59.5	59.1	59.6	60.6	61.9	61.7	60.9
Industry.....	22.7	21.2	20.1	19.8	18.9	18.7	18.1	19.1
Federal Government .....	7.2	7.4	7.6	7.8	7.7	6.6	6.5	6.2
Nonprofit institutions .....	7.6	8.5	10.0	9.7	9.6	9.4	9.9	9.8
FFRDCs .....	2.7	2.1	1.9	1.9	2.0	1.9	2.4	2.6
State/local government.....	0.8	0.7	0.7	0.6	0.7	0.9	0.7	0.6
Unknown.....	0.6	0.5	0.5	0.6	0.5	0.5	0.6	0.8
Clinical medicine (number of articles) .....	4,461	6,679	10,063	14,133	13,240	11,805	12,961	11,776
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	59.6	58.6	57.8	58.8	58.6	58.9	59.7	58.0
Industry.....	17.4	17.9	18.9	18.8	18.4	18.4	17.4	18.1
Federal Government .....	8.7	9.0	8.6	8.5	9.1	8.3	8.2	8.3
Nonprofit institutions .....	11.7	12.0	12.3	11.6	11.6	12.4	12.7	13.5
FFRDCs .....	0.9	0.8	0.9	0.8	0.9	0.6	0.6	0.6
State/local government .....	0.9	1.1	0.8	0.7	0.8	0.7	0.6	0.6
Unknown.....	0.8	0.8	0.7	0.8	0.7	0.7	0.9	1.0
Biomedical research (number of articles) .....	5,944	9,619	14,383	20,993	19,771	17,717	19,335	17,251
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	59.6	59.9	59.0	60.2	61.6	62.9	61.7	61.3
Industry.....	19.1	18.6	18.1	17.9	17.1	17.0	17.1	18.0
Federal Government .....	8.4	8.1	8.1	8.1	7.3	6.2	6.1	5.5
Nonprofit institutions .....	10.9	11.2	12.6	11.8	11.9	11.9	12.5	12.3
FFRDCs .....	1.5	1.5	1.3	1.4	1.4	1.2	1.7	2.0
State/local government .....	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.3
Unknown.....	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.7
Biology (number of articles) .....	399	585	705	940	1,185	1,041	1,079	873
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	62.0	69.9	66.5	64.0	69.1	66.8	64.8	62.3
Industry.....	17.3	10.7	14.3	15.2	12.6	14.3	14.7	16.1
Federal Government .....	14.9	13.0	12.3	13.7	11.9	12.3	14.5	15.7
Nonprofit institutions .....	4.0	4.1	5.2	5.7	5.4	6.0	5.2	5.0
FFRDCs .....	0.9	1.1	0.9	0.9	0.5	0.5	0.4	0.7
State/local government .....	0.4	0.2	0.4	0.2	0.2	0.1	0.2	0.0
Unknown.....	0.4	1.0	0.5	0.2	0.3	0.0	0.3	0.2
Chemistry (number of articles).....	2,098	2,631	3,254	3,567	3,469	3,943	4,666	4,725
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	65.4	63.8	61.3	59.4	57.3	63.6	58.8	60.7
Industry.....	23.8	27.0	29.2	29.4	29.4	26.1	27.0	26.6
Federal Government .....	2.6	3.1	2.7	3.7	4.7	2.9	2.2	1.6
Nonprofit institutions .....	3.6	3.2	3.3	3.9	3.5	2.7	5.6	5.1
FFRDCs .....	3.8	2.5	3.0	3.2	4.6	4.3	5.7	5.0
State/local government .....	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.2
Unknown.....	0.7	0.3	0.3	0.2	0.3	0.4	0.6	0.6
Physics (number of articles).....	2,153	2,172	2,236	2,468	2,438	2,513	2,534	2,686
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	39.7	42.9	43.9	42.5	47.0	48.4	52.9	50.5
Industry.....	45.5	44.8	40.2	41.5	38.4	39.2	32.8	35.2
Federal Government .....	5.2	3.8	6.4	5.6	4.6	4.0	4.6	4.8
Nonprofit institutions .....	1.5	1.1	2.3	1.6	1.7	0.6	0.8	0.7
FFRDCs .....	7.8	7.1	6.9	8.5	7.9	7.5	8.8	8.5
State/local government .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown.....	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.3
Engineering/technology (number of articles) .....	1,460	1,713	1,782	2,119	1,996	2,050	2,005	2,154
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	44.1	46.2	45.6	45.1	48.0	49.1	49.9	49.3
Industry.....	46.7	44.8	45.1	44.5	42.3	41.0	39.8	40.8
Federal Government .....	3.0	3.7	2.7	3.4	2.7	3.4	3.6	4.0
Nonprofit institutions .....	1.5	1.3	1.5	1.8	1.3	1.0	1.0	1.1
FFRDCs .....	3.3	3.0	3.7	3.4	3.9	4.1	4.5	4.3
State/local government .....	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Unknown.....	1.3	1.1	1.4	1.7	1.8	1.1	1.2	0.6

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**U.S. patent citations to S&E articles, by field and sector: 1995–2002**

(Percent distribution)

Field and sector	1995	1996	1997	1998	1999	2000	2001	2002
Other (number of articles) .....	112	128	155	241	229	326	221	244
All sectors .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Academic .....	66.1	60.9	62.5	62.5	66.5	68.3	65.5	57.7
Industry .....	14.4	19.8	14.6	13.4	17.0	14.5	16.6	17.1
Federal Government .....	9.2	7.5	8.4	11.9	8.7	6.8	7.1	9.6
Nonprofit institutions .....	0.3	5.7	7.0	4.3	2.1	3.7	5.2	4.8
FFRDCs .....	7.8	3.0	3.2	2.7	1.7	2.3	2.8	5.3
State/local government .....	1.0	1.5	2.3	1.2	0.9	1.0	1.1	2.3
Unknown .....	1.1	1.7	2.0	3.9	2.9	3.4	1.7	3.2

FFRDC federally funded research and development center

NOTES: Citations are references to U.S. S&E articles in journals covered by the Institute for Scientific Information's Science Citation Index and Social Sciences Citation Index. Citation counts are based on a 6-year window with a 2-year lag. For example, citations for 2002 are references made in U.S. patents issued in 2002 to articles published in 1995–2000. 2002 patent data are preliminary and subject to change. Sector is determined by the cited article's institutional address. S&E field is determined by CHI's classification of the journal. Computer sciences are included in engineering and technology. Other includes the fields of earth and space sciences, mathematics, social sciences, psychology, health sciences, and professional field. Percents may not sum to 100 because of rounding.

SOURCES: U.S. Patent and Trademark Office; Institute for Scientific Information, Science Citation Index and Social Sciences Citation Index; CHI Research, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.