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TRACKING TRENDS AND PERFORMANCE IN BASIC RESEARCH

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Physical Sciences at U.S. Universities: Harvard, Stanford Top the "Top Tens"

Highest Impact Universities in Physical and Social Science Fields, 1997-2001

Physics >500 papers				Chemistry >500 papers			
Rank	Institution	# of Papers	Relative Impact (%)	Rank	Institution	# of Papers	Relative Impact (%)
1	Rice University	520	+291	1	Yale University	778	+227
2	Univ. Calif., Santa Cruz	2,519	+284	2	Caltech	1,115	+204
3	University of Pennsylvania	1,100	+231	3	Harvard University	1,108	+202
4	Harvard University	1,771	+223	4	MIT	1,723	+159
5	Boston University	1,175	+219	5	Univ. Calif., San Diego	899	+148
6	Stanford University	2,645	+187	6	Northwestern University	1,229	+138
7	Univ. Calif., Santa Barbara	2,519	+187	7	Univ. Calif., Santa Barbara	915	+127
8	University of Washington	1,570	+179	8	Univ. Calif., Berkeley	2,679	+126
9	SUNY Stony Brook	1,424	+178	9	Carnegie Mellon University	649	+125
10	Louisiana State University	607	+170	10	U. North Carolina, Chapel Hill	992	+119

SOURCE: ISI University Science Indicators

This is the second of two installments in the latest "Top Ten" roundup of U.S. university research in 21 fields, as measured by the citation impact of research papers published and cited between 1997 and 2001. The first part of the survey appeared in the previous issue and presented Top Ten rankings in nine biological or biomedical fields (see *Science Watch*, 13[5]:1-2, September/October 2002). This second part features 12 listings in the physical and social sciences (11 tables, along with one ranking presented in the text below). Physics and chemistry appear above, with the other tables on page 2. All the rankings are based on "relative citation impact"—that is, each university's average-citations-per-paper score for the five-year period compared, on a percentage basis, against the world impact average in each field. The rankings are based on exclusive publication and citation data on more than 100 U.S. universities in Thomson ISI's *University Science Indicators*, 1981-2001.

In terms of overall results, as was noted in the first part of the survey, Harvard scored the greatest number of Top Ten placements, appearing in 15 of the 21 fields. Stanford was second, with 11 placements. In all, 10 schools achieved particular distinction in the overall survey, with at least six Top Ten appearances each (Harvard, Stanford, MIT, Uni-

versity of California (UC) at San Diego, Yale, UC Berkeley, Columbia, Caltech, University of Michigan, and Duke). Collectively, these universities accounted for 88 Top Ten placements—more than 40% of the 210 available spots in the 21 fields.

As in the overall standings, Harvard and Stanford are the standout universities in the physical- and social-science rankings presented here: Harvard appears in eight of the listings, Stanford in seven. Four schools—Caltech, Columbia, MIT, and UC Berkeley—made the Top Ten in six of the accompanying fields.

Space limitations prevented a table for one of the social-science fields, Education. Of those universities that published at least 100 papers between 1997 and 2001 in education journals indexed by ISI, the University of Michigan ranked highest in relative impact, scoring 131% above the citations-per-paper average in the field. UCLA was next (92% above the field average), followed by Purdue (+80), the University of North Carolina, Chapel Hill (+76), the University of Wisconsin, Madison (+64), the University of Georgia (+62), the University of Texas, Austin (+62), Michigan State University (+56), University of Maryland, College Park (+52), and the University of Minnesota (+52).

Top Ten Universities in Physical and Social Science Fields, 1997-2001

Geosciences >300 papers				Space Science >500 papers				Materials Science >300 papers			
Rank	Institution	# of Papers	Relative Impact (%)	Rank	Institution	# of Papers	Relative Impact (%)	Rank	Institution	# of Papers	Relative Impact (%)
1	Harvard University	504	+195	1	Univ. Calif., Santa Cruz	624	+130	1	Univ. Calif., Santa Barbara	379	+302
2	Princeton University	555	+151	2	Univ. Calif., Berkeley	1,325	+123	2	University of Minnesota	353	+167
3	University of Washington	1,215	+137	3	University of Hawaii	574	+123	3	MIT	667	+127
4	Columbia University	794	+123	4	University of Michigan	554	+97	4	Univ. Calif., Berkeley	622	+123
5	MIT	893	+113	5	Princeton University	647	+91	5	North Carolina State Univ.	562	+75
6	Caltech	1,213	+106	6	Caltech	2,390	+72	6	Northwestern University	511	+74
7	Univ. Calif., San Diego	980	+106	7	University of Arizona	1,168	+53	7	Pennsylvania State Univ.	877	+74
8	University of Colorado	1,488	+105	8	University of Colorado	777	+51	8	Univ. Illinois, Urbana	539	+62
9	Woods Hole Ocean. Inst.	953	+102	9	University of Chicago	560	+50	9	University of Florida	405	+54
10	University of Miami	464	+101	10	Johns Hopkins University	1,052	+49	10	University of Michigan	409	+48
Mathematics >200 papers				Engineering >300 papers				Computer Science >100 papers			
Rank	Institution	# of Papers	Relative Impact (%)	Rank	Institution	# of Papers	Relative Impact (%)	Rank	Institution	# of Papers	Relative Impact (%)
1	Caltech	225	+156	1	Yale University	314	+249	1	Princeton University	188	+236
2	New York University	336	+138	2	Univ. Calif., Santa Barbara	698	+154	2	Caltech	195	+181
3	Stanford University	417	+133	3	Stanford University	1,513	+153	3	Univ. Calif., Berkeley	376	+129
4	Harvard University	390	+131	4	Caltech	1,352	+144	4	Univ. Illinois, Urbana	331	+127
5	University of Washington	299	+120	5	Harvard University	475	+128	5	Columbia University	149	+118
6	Cornell University	400	+120	6	Cornell University	957	+121	6	Stanford University	407	+100
7	Columbia University	261	+102	7	Princeton University	840	+120	7	University of Pennsylvania	156	+97
8	Univ. Calif., Los Angeles	441	+92	8	University of Arizona	757	+107	8	MIT	574	+82
9	MIT	471	+84	9	Univ. Calif., Los Angeles	1,191	+105	9	Univ. Massachusetts, Amherst	143	+80
10	Univ. Calif., Berkeley	651	+82	10	Boston University	397	+104	10	Univ. Calif., San Diego	288	+76
Psychology/Psychiatry >300 papers				Economics & Business >300 papers				Law >100 papers			
Rank	Institution	# of Papers	Relative Impact (%)	Rank	Institution	# of Papers	Relative Impact (%)	Rank	Institution	# of Papers	Relative Impact (%)
1	Duke University	704	+107	1	University of Chicago	525	+229	1	Yale University	187	+146
2	Harvard University	1,869	+107	2	Harvard University	1,029	+152	2	Harvard University	282	+111
3	University of Pittsburgh	1,104	+107	3	MIT	647	+129	3	University of Chicago	299	+105
4	Carnegie Mellon University	319	+103	4	Northwestern University	520	+128	4	University of Michigan	141	+104
5	Virginia Commonwealth Univ.	374	+95	5	Stanford University	604	+128	5	Univ. Texas, Austin	151	+100
6	Yale University	1,240	+95	6	University of Pennsylvania	729	+123	6	University of Virginia	193	+95
7	Columbia University	1,197	+93	7	Columbia University	510	+115	7	Columbia University	184	+87
8	Case Western Reserve U.	375	+88	8	Duke University	312	+112	8	New York University	177	+74
9	Stanford University	940	+87	9	Univ. Calif., Berkeley	592	+107	9	Cornell University	121	+54
10	Univ. Calif., San Diego	836	+86	10	Univ. Calif., Los Angeles	410	+102	10	Stanford University	176	+36

SOURCE: ISI University Science Indicators

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