

THE CHRONICLE

of Higher Education®

<http://chronicle.com>

January 12, 2007
Volume LIII, Number 19

How Faculties Measure Up

A controversial new index offers another way to rank doctoral programs

Washington U.
in St. Louis
No. 1 in
political science



Johns
Hopkins U.
No. 1 in
art history

U. of Wisconsin
at Madison
No. 1 in
industrial
engineering



Vanderbilt U.
No. 1 in
comparative
literature

U. of Michigan
at Ann Arbor
No. 1 in
applied
mathematics



Yale U.
No. 1 in
neuroscience

THE FACULTY

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A New Standard for Measuring Doctoral Programs

Annual index ranks departments according to their scholarly output—
but its methods rankle some college officials

BY PIPER FOGG

FOR YEARS when the dean of the graduate school at Washington University in St. Louis wanted to know how its programs stacked up to their peers, he was at a loss. He resorted to using *U.S. News & World Report's* annual rankings of graduate programs, even though many in academe pooh-pooh them as unscientific. The National Research Council's rankings of doctoral programs, considered the gold standard in academe, have not been updated since 1995.

The council's most popular rankings, which are based on reputation alone, also made him uneasy. "We really wanted objective measures," says the dean, Robert E. Thach. "We really didn't want projections, opinions to enter into it."

Mr. Thach, and other administrators who have long shared his frustration, have gotten their wish. A new annual index of graduate programs has burst onto the scene.

The Faculty Scholarly Productivity Index, partly financed by the State University of New York at Stony Brook and produced by Academic Analytics, a for-profit company, rates faculty members' scholarly output at nearly 7,300 doctoral programs around the country. It examines the number of book and journal articles published by each program's faculty, as well as journal citations, awards, honors, and grants received. The company has given *The Chronicle* exclusive access to some of its data, including rankings of the top 10 programs in 104 disciplines.

The most recent index, based on data from 2005, contains plenty of surprises. Some relatively unknown programs rank higher than Ivy League and other institutions with sterling reputations. Take English. The index ranks the University of Georgia at No. 2, while Columbia, Cornell, Duke, Harvard, and Yale Universities, and the Universities of Pennsylvania and of Virginia don't even crack the top 10.

Administrators are always interested in the productivity of their faculties. Harvard's former president, Lawrence H. Summers, famously alienated one of the institution's most prominent faculty members, Cornel West, in 2001 when he questioned whether Mr. West, then a professor of

Afro-American studies, was producing the quality of research befitting a Harvard professor.

The new index, boasts Academic Analytics, is the first completely objective measure of productivity. And while it does not reveal data it collects on individual faculty members, its information on departments could give officials hard facts to back up sometimes unpopular decisions to

reorganize programs or invest in specific fields.

The index is already attracting attention, both positive and negative, for the way it ranks programs, its occasionally curious results, and its for-profit status. Client universities, which pay up to \$30,000 a year, welcome the service. They praise its objective benchmarks, its transparent methodology, and the fact that it is scheduled to come out regularly and predictably.

Mr. Thach, who signed on as a client for three years, has distributed the data to his departments and the Board of Trustees. And he has already used the data to track the effects of recent faculty hires on productivity. "If you make five senior hires," he says, "you can see the impact."

Not everyone in academe is singing the index's praises. Some graduate-school officials complain the data are flawed. Since the company compiles names of faculty members from university Web sites, which can be incomplete or outdated, these critics say the whole ranking system is skewed. Others say the index costs enough that it ought to include data on

TO SEE DATA from the 2005 Faculty Scholarly Productivity Index, provided exclusively to *The Chronicle*, including the top 10 Ph.D. programs in 104 disciplines, go to <http://chronicle.com/stats/productivity>

Top 10 Institutions in 6 Aggregated Fields

Rank	Institution	Faculty Scholarly Productivity Index	Number of faculty	Percentage of faculty with a book publication	Books per faculty	Percentage of faculty with a journal publication	Journal publications per faculty	Percentage of faculty with journal publication cited by another work	Citations per faculty	Citations per paper	Percentage of faculty getting a new grant	New grants per faculty	Total value of new grants per faculty	Average amount of grant	Percentage of faculty with an award	Awards per faculty
Language and Literature																
1	Harvard U.	1.90	70	37%	1.69	13%	0.47	6%	2.36	5.00	-	-	-	-	7%	0.11
2	Syracuse U.	1.74	31	45	0.74	6	0.06	3	0.10	1.50	-	-	-	-	16	0.16
2	U. of Chicago	1.74	112	32	0.88	16	0.32	4	0.45	1.39	-	-	-	-	13	0.19
4	U. of Louisville	1.72	35	34	1.77	11	0.43	6	0.06	0.13	-	-	-	-	9	0.09
5	Princeton U.	1.59	114	32	0.85	5	0.10	3	0.19	2.00	-	-	-	-	13	0.18
6	U. of California at Berkeley	1.57	228	32	0.75	15	0.24	7	0.46	1.91	-	-	-	-	8	0.11
7	Texas A&M U.	1.56	48	48	1.25	6	0.06	2	0.04	0.67	-	-	-	-	4	0.06
7	Yale U.	1.56	101	31	2.78	6	0.21	4	1.01	4.86	-	-	-	-	6	0.10
9	Stanford U.	1.52	85	26	0.89	13	0.35	7	0.27	0.77	-	-	-	-	12	0.15
10	U. of Arkansas at Fayetteville	1.50	39	49	0.90	5	0.05	0	0.00	0.00	-	-	-	-	5	0.05
Weight of each variable in index				-	34.66%	34.66%	3.29%	3.29%	3.29%	3.29%	-	-	-	-	7.14%	7.14%
Philosophy and Religious Studies																
1	City U. of New York Graduate Center	2.02	39	28%	0.49	31%	0.87	26%	2.77	3.18	-	-	-	-	5%	0.05
2	Rutgers U. at New Brunswick	1.96	32	38	0.72	28	0.56	19	0.53	0.94	-	-	-	-	6	0.06
3	Duke U.	1.94	53	26	0.53	15	0.30	6	2.15	7.13	-	-	-	-	11	0.21
3	Michigan State U.	1.94	24	25	0.25	42	1.13	33	2.46	2.19	-	-	-	-	8	0.08
5	Pennsylvania State U.	1.90	16	63	1.06	31	0.56	6	0.06	0.11	-	-	-	-	6	0.13
6	U. of California at San Diego	1.82	20	15	0.45	40	0.90	30	1.65	1.83	-	-	-	-	5	0.10
7	U. of Kentucky	1.77	15	33	0.47	13	0.40	13	1.20	3.00	-	-	-	-	7	0.07
8	State U. of New York at Stony Brook	1.69	23	48	1.00	39	1.70	17	0.39	0.23	-	-	-	-	0	0.00
9	Princeton U.	1.64	31	32	0.48	13	0.19	3	0.58	3.00	-	-	-	-	10	0.13
10	Yale U.	1.60	46	39	0.63	13	0.17	7	0.41	2.38	-	-	-	-	7	0.07
Weight of each variable in index				-	27.63%	27.63%	6.09%	6.09%	6.09%	6.09%	-	-	-	-	7.14%	7.14%
Computer and Information Sciences																
1	Stanford U.	2.04	53	0%	0.00	91%	8.96	79%	35.25	3.93	45%	0.62	\$353,725	\$568,104	8%	0.08
2	Columbia U.	1.90	31	0	0.00	87	7.81	68	16.00	2.05	65	1.03	419,376	406,270	10	0.13
3	U. of Minnesota-Twin Cities	1.75	90	0	0.00	77	7.61	64	36.28	4.77	51	1.18	386,310	327,999	2	0.02
4	Carnegie Mellon U.	1.70	86	0	0.00	85	5.19	67	12.79	2.47	44	0.78	372,833	478,561	8	0.08
5	Pennsylvania State U.	1.67	66	0	0.00	86	6.39	70	16.15	2.53	45	0.83	259,826	311,791	2	0.02
6	California Institute of Technology	1.66	16	0	0.00	75	5.25	56	22.19	4.23	56	1.44	534,701	371,966	13	0.13
7	Boston U.	1.64	21	0	0.00	90	5.90	62	19.10	3.23	67	1.14	468,449	409,893	0	0.00
8	Princeton U.	1.62	33	6	0.06	82	4.79	76	9.42	1.97	70	0.94	391,256	416,499	12	0.12
8	U. of North Carolina at Chapel Hill	1.62	36	0	0.00	86	5.25	78	19.44	3.70	50	0.92	409,859	447,119	0	0.00
10	Cornell U.	1.61	73	0	0.00	79	4.78	71	10.99	2.30	55	0.86	416,865	483,034	4	0.07
Weight of each variable in index				-	0.32%	0.32%	11.87%	11.87%	11.87%	11.87%	7.50%	7.50%	7.50%	7.50%	5.00%	5.00%
Mathematics and Statistics																
1	Duke U.	1.92	56	5%	0.13	73%	3.63	66%	16.93	4.67	50%	0.63	\$175,694	\$281,110	5%	0.07
2	U. of California at Berkeley	1.88	95	0	0.00	76	3.86	61	21.07	5.46	56	0.79	342,106	433,335	4	0.05
3	Harvard U.	1.81	64	14	0.25	64	4.63	48	35.64	7.71	44	0.66	182,318	277,818	5	0.05
3	U. of Wisconsin at Madison	1.81	95	7	0.08	76	4.46	66	17.98	4.03	44	0.72	138,012	192,811	3	0.03
5	Yale U.	1.80	50	10	0.22	70	3.40	50	15.46	4.55	40	0.78	258,437	331,330	4	0.04
6	U. of Texas at Austin	1.79	128	8	0.08	66	4.61	53	20.42	4.43	41	0.56	176,743	314,209	5	0.05
7	Cornell U.	1.78	126	0	0.00	76	5.66	65	17.08	3.02	55	0.72	268,884	372,301	2	0.05
8	New York U.	1.74	94	10	0.11	72	4.40	68	23.20	5.27	34	0.55	167,174	302,200	1	0.01
8	U. of Michigan at Ann Arbor	1.74	128	0	0.00	76	4.77	60	15.34	3.22	50	0.82	290,896	354,616	3	0.05
10	Boston U.	1.66	43	0	0.00	67	5.09	51	27.42	5.38	37	0.51	790,451	1,544,972	2	0.02
Weight of each variable in index				-	4.01%	4.01%	10.40%	10.40%	10.40%	10.40%	7.50%	7.50%	7.50%	7.50%	5.00%	5.00%
Psychology																
1	Harvard U.	2.15	23	26%	0.70	96%	11.91	96%	70.30	5.90	87%	2.30	\$742,464	\$322,201	13%	0.13
2	Yale U.	2.08	57	19	0.68	86	7.33	82	38.72	5.28	44	1.70	774,609	455,183	7	0.07
3	Carnegie Mellon U.	2.07	30	23	0.57	87	5.97	77	31.07	5.21	63	2.20	1,334,717	606,689	3	0.03
4	Washington U. in St. Louis	1.97	32	13	0.13	94	6.25	88	37.81	6.05	47	1.19	372,599	313,767	3	0.06
5	U. of Pennsylvania	1.89	63	0	0.00	97	7.22	95	39.32	5.44	57	1.83	708,448	388,106	3	0.03
6	U. of Wisconsin at Madison	1.85	98	4	0.07	77	4.90	66	34.35	7.01	45	1.69	749,611	442,541	4	0.04
7	Dartmouth College	1.79	19	11	0.16	95	6.16	95	36.68	5.96	58	1.79	657,506	367,430	0	0.00
8	Emory U.	1.65	56	7	0.11	73	5.71	64	28.88	5.05	32	1.18	484,033	410,695	2	0.02
9	Columbia U.	1.61	24	0	0.00	83	5.96	79	44.04	7.39	71	2.25	753,668	334,964	0	0.00
10	Duke U.	1.58	21	5	0.05	81	4.76	71	35.19	7.39	52	1.71	565,984	330,157	0	0.00
10	Vanderbilt U.	1.58	59	3	0.03	83	5.02	80	25.03	4.99	59	2.00	691,869	345,935	0	0.00
Weight of each variable in index				-	3.10%	3.10%	10.76%	10.76%	10.76%	10.76%	7.50%	7.50%	7.50%	7.50%	5.00%	5.00%
Social Sciences																
1	Harvard U.	2.22	188	27%	0.76	65%	2.52	54%	12.35	4.90	22%	0.40	\$89,929	\$222,456	6%	0.08
2	Massachusetts Institute of Technology	2.17	66	26	1.08	62	2.24	48	7.00	3.12	26	0.33	80,716	242,149	8	0.09
3	U. of Wisconsin at Madison	1.84	243	15	0.23	53	1.60	44	4.95	3.10	22	0.43	279,657	653,429	7	0.08
4	Washington U. in St. Louis	1.80	71	21	0.37	58	1.83	46	5.77	3.15	25	0.46	44,746	96,272	10	0.14
5	Pennsylvania State U.	1.79	138	17	0.30	61	1.91	48	6.48	3.40	20	0.22	55,815	256,748	6	0.07
6	State U. of New York at Stony Brook	1.69	79	16	0.30	58	1.89	49	9.54	5.06	24	0.29	35,783	122,907	5	0.05
7	Duke U.	1.67	154	16	0.21	57	1.69	41	6.96	4.12	18	0.29	58,157	199,026	7	0.10
8	U. of Pennsylvania	1.66	153	10	0.16	49	2.03	37	7.73	3.82	22	0.52	138,757	265,373	7	0.07
9	U. of California at San Francisco	1.62	40	5	0.05	70	2.73	55	7.70	2.83	23	0.65	190,174	292,575	3	0.03
10	U. of Maryland at College Park	1.57	140	22	0.35	52	1.30	39	5.06	3.89	16	0.26	63,299	239,511	5	0.06
Weight of each variable in index				-	10.34%	10.34%	7.87%	7.87%	7.87%	7.87%	7.50%	7.50%	7.50%	7.50%	5.00%	5.00%

individuals. The surprisingly high rankings of some programs have made some academics skeptical, while many others turn up their noses because they view the index as too commercial.

But satisfied customers say otherwise. "Academic Analytics is so valuable," says Howard Jackson, former dean of the graduate school at the University of Cincinnati, because "assessment is in the air, and it isn't going away."

AN INDEX IS BORN

The brainchild of Lawrence B. Martin, graduate dean at the State University of New York at Stony Brook, the project is a culmination of more than a decade of studying, speaking, and writing about the productivity of faculty members. As a former member of the methodology committee for the National Research Council's next study, Mr. Martin wanted an annual, updatable index that would complement the council's data. He serves as chief scientific consultant at Academic Analytics, which was founded to commercialize his ideas.

Mr. Martin knows a thing or two about assessment. As Stony Brook's graduate dean for 13 years, he is a seasoned administrator.

He has served on university committees that deal with merit pay and faculty productivity. And he is a member of a New York State Department of Education panel that focuses on assessment and institutional effectiveness. An anthropologist who studies ape and human evolution, the British-born professor also has the academic chops that his colleagues respect. That he is not seen as someone out to make a quick buck— despite being a paid consultant and owning 15 percent of the company— has helped sell the index.

Mr. Martin spent years analyzing faculty-productivity data from the 1995 National Research Council study, "Research-Doctorate Programs in the United States: Continuity and Change" which rates the quality, effectiveness, and reputation of more than 3,600 doctoral programs at 274 universities. He used those data to determine which variables would be the best predictors of a program's reputation, then created algorithms to produce his own set of rankings.

With financial backing from Stony Brook and Educational Directories Unlimited, which owns the Web site GradSchools.com, Academic Analytics was born. It produced its first index last year based on data from 2004, and covered 6,389 programs at 352 institutions. Its most

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Top Departments in 104 Fields, as Ranked by the 2005 Faculty Scholarly Productivity Index

The index uses data such as faculty publications, grants, and honors and awards to rank a total of 104 programs at institutions based on the research productivity of faculty members.

Discipline	Institution
Accounting	Michigan State U.
Aeronautical and aerospace engineering	Princeton U.
African-American and African studies	Harvard U.
Agricultural and bioengineering	California Institute of Technology
Agricultural economics	Colorado State U.
Agronomy and crop sciences	U. of Arizona
American studies	Harvard U.
Anatomy	Columbia U.
Animal science	U. of Massachusetts at Amherst
Anthropology	Pennsylvania State U.
Applied mathematics	U. of Michigan at Ann Arbor
Architecture	Michigan State U.
Art history	Johns Hopkins U.
Astronomy and astrophysics	U. of California at Berkeley
Atmospheric sciences	U. of California at Irvine
Biochemistry	U. of California at San Francisco
Bioinformatics	Yale U.
Biomedical engineering	U. of Pennsylvania
Biophysics	Scripps Research Institute
Botany and plant biology	U. of California at Berkeley
Business administration	U. of Illinois at Chicago; U. of Washington (tie)
Cell biology	U. of California at San Francisco
Chemical engineering	California Institute of Technology
Chemistry	Harvard U.
Civil and environmental engineering	California Institute of Technology
Classics	Harvard U.
Clinical psychology	San Diego State U.*
Cognitive science	Carnegie Mellon U.
Communication	U. of Arizona
Communication sciences and disorders	U. of Iowa
Comparative literature	Vanderbilt U.
Computer engineering	Cornell U.
Computer science	Stanford U.
Counseling education/counseling and guidance	Kent State U.
Counseling psychology	Boston College
Criminology and justice studies	U. of Maryland at College Park
Developmental biology	Stanford U.
East Asian languages and cultures	U. of Chicago
Ecology and evolutionary biology	Washington U. in St. Louis
Economics	Harvard U.
Educational leadership	Vanderbilt U.
Educational psychology	U. of Wisconsin at Madison
Electrical engineering	Cornell U.
English	Princeton U.
Entomology	U. of Illinois at Urbana-Champaign
Environmental-health engineering	Columbia U.
Environmental science	California Institute of Technology
Epidemiology	Harvard U.
Finance	New York U.
Fisheries science and management	U. of Washington

* San Diego State's Ph.D. programs are offered in conjunction with the U. of California at San Diego.

Discipline	Institution
Food science	Cornell U.
Forestry	Yale U.
French	Indiana U. at Bloomington
Genetics	U. of Washington
Geography	U. of California at Los Angeles
Geosciences	California Institute of Technology
German	Pennsylvania State U.
Hispanic studies	U. of Kentucky
History	Princeton U.
Horticulture	U. of Wisconsin at Madison
Immunology	Yale U.
Industrial engineering	U. of Wisconsin at Madison
Information science	Cornell U.
Italian	New York U.
Kinesiology and exercise science	U. of South Carolina at Columbia
Linguistics	U. of Maryland at College Park
Management	Columbia U.
Marine biology and biological oceanography	Massachusetts Institute of Technology
Marketing	U. of Pennsylvania
Mass communication/media studies	Pennsylvania State U.
Materials science and engineering	U. of California at Santa Barbara
Mathematics	New York U.
Mechanical engineering	U. of California at Berkeley
Microbiology	U. of Washington
Molecular biology	U. of California at San Francisco
Music	Harvard U.
Near and Middle Eastern studies	Princeton U.
Neuroscience	Yale U.
Nuclear engineering	U. of Maryland at College Park
Nursing	U. of Alabama at Birmingham
Nutrition	Columbia U.
Pathology	Emory U.
Pharmaceutical sciences and medicinal chemistry	U. of Washington
Pharmacology	Vanderbilt U.
Philosophy	Michigan State U.
Physical oceanography	Massachusetts Institute of Technology
Physics	California Institute of Technology
Physiology	Johns Hopkins U.
Plant pathology	U. of Kentucky
Political science	Washington U. in St. Louis
Portuguese	Vanderbilt U.
Public administration and policy	Duke U.
Public health	Harvard U.
Social work	U. of California at Berkeley
Sociology	Harvard U.
Soil science	U. of California at Riverside
Spanish	Vanderbilt U.
Special education	Vanderbilt U.
Statistics	Stanford U.
Teacher education and professional development	U. of California at Berkeley
Theater	New York U.
Toxicology	U. of North Carolina at Chapel Hill
Women's studies	Pennsylvania State U.
Zoology	U. of Washington

Top 10 Institutions in 24 Disciplines

Rank	Institution	Faculty Scholarly Productivity Index	Rank	Institution	Faculty Scholarly Productivity Index	Rank	Institution	Faculty Scholarly Productivity Index						
Accounting														
1	Michigan State U.	1.90	1	Boston College	1.64	1	Yale U.	1.90						
2	Ohio State U.	1.76	2	Pennsylvania State U.	1.52	2	Vanderbilt U.	1.89						
3	U. of Pennsylvania	1.57	3	Virginia Commonwealth U.	1.47	3	Johns Hopkins U.	1.78						
4	Pennsylvania State U.	1.25	4	U. of Missouri at Columbia	1.44	4	Mayo Graduate School	1.71						
5	Georgia State U.	1.12	5	U. of Akron main campus	1.28	5	Duke U.	1.68						
6	Emory U.	1.10	6	Teachers College at Columbia U.	1.16	5	U. of California at San Francisco	1.68						
6	U. of Iowa	1.10	7	Brigham Young U.	1.08	7	Brandeis U.	1.67						
8	New York U.	1.04	8	U. of Wisconsin at Milwaukee	1.03	8	U. of California at Berkeley	1.58						
9	Northwestern U.	0.93	9	U. of Kentucky	0.94	9	U. of Pittsburgh	1.54						
10	Syracuse U.	0.90	10	State U. of New York at Buffalo	0.79	10	U. of Pennsylvania	1.51						
Agricultural Economics														
1	Colorado State U.	1.92	Ecology and Evolutionary Biology						10	U. of Washington	1.51			
2	Iowa State U.	1.77	1	Washington U. in St. Louis	1.95	Nursing								
3	U. of California at Berkeley	1.54	2	Emory U.	1.79	1	U. of Alabama at Birmingham	1.85						
4	U. of Rhode Island	1.49	3	Indiana U. at Bloomington	1.74	2	Emory U.	1.84						
5	U. of California at Davis	1.13	4	Harvard U.	1.46	3	U. of Pennsylvania	1.83						
6	U. of Wisconsin at Madison	0.80	5	Princeton U.	1.45	4	New York U.	1.69						
7	Oregon State U.	0.76	6	U. of Illinois at Urbana-Champaign	1.44	5	Wayne State U.	1.66						
8	West Virginia U.	0.73	7	Yale U.	1.27	6	Duke U.	1.57						
9	Purdue U.	0.43	8	Georgia Institute of Technology	1.12	7	U. of Rochester	1.48						
10	Auburn U.	0.27	9	Duke U.	1.11	7	U. of Wisconsin at Madison	1.48						
Applied Mathematics														
1	U. of Michigan at Ann Arbor	1.47	Economics						9	U. of Kentucky	1.42			
2	Cornell U.	1.43	1	Harvard U.	2.48	10	U. of Illinois at Chicago	1.36						
3	U. of Texas at Austin	1.42	2	Massachusetts Institute of Technology	2.43	Physics								
4	Princeton U.	1.37	3	Yale U.	2.16	1	California Institute of Technology	2.12						
4	Stanford U.	1.37	4	Johns Hopkins U.	2.13	2	Harvard U.	2.01						
6	Brown U.	1.27	5	Princeton U.	2.12	3	Cornell U.	1.99						
7	U. of Washington	1.26	6	U. of Pennsylvania	1.73	3	Johns Hopkins U.	1.99						
8	Columbia U.	1.23	7	Duke U.	1.62	5	U. of California at Berkeley	1.92						
9	Carnegie Mellon U.	1.07	8	U. of Wisconsin at Madison	1.58	6	New York U.	1.80						
10	Georgia Institute of Technology	0.94	9	U. of California at San Diego	1.50	7	U. of Michigan at Ann Arbor	1.69						
Art History														
1	Johns Hopkins U.	1.75	English						8	Duke U.	1.66			
2	New York U.	1.65	1	Princeton U.	1.99	9	Stanford U.	1.61						
3	U. of Illinois at Urbana-Champaign	1.54	2	U. of Georgia	1.79	Political Science								
4	Yale U.	1.53	3	Pennsylvania State U.	1.69	1	Washington U. in St. Louis	2.22						
5	U. of California at Berkeley	1.39	4	Washington U. in St. Louis	1.68	2	Harvard U.	1.91						
6	U. of Chicago	1.35	5	Johns Hopkins U.	1.64	3	Yale U.	1.86						
7	U. of California at Los Angeles	1.25	5	Stanford U.	1.64	4	State U. of New York at Stony Brook	1.81						
8	U. of Maryland at College Park	1.15	7	U. of Illinois at Urbana-Champaign	1.60	5	U. of Illinois at Urbana-Champaign	1.64						
9	City U. of New York Graduate Center	1.11	8	U. of California at Berkeley	1.53	6	U. of Kansas	1.48						
9	Stanford U.	1.11	8	U. of Florida	1.53	7	U. of Maryland at College Park	1.41						
Bioinformatics														
1	Yale U.	1.79	10	City U. of New York Graduate Center	1.51	8	Princeton U.	1.36						
2	U. of California at San Francisco	1.44	10	U. of Chicago	1.51	8	U. of California at Santa Barbara	1.36						
3	Duke U.	1.31	Environmental Science						10	U. of Virginia	1.33			
3	U. of California at San Diego	1.31	1	California Institute of Technology	2.12	Social Work								
5	Cornell U.	1.29	2	Dartmouth College	1.95	1	U. of California at Berkeley	1.98						
6	U. of Michigan at Ann Arbor	1.24	3	U. of Wisconsin at Madison	1.63	2	U. of Pennsylvania	1.63						
7	Washington U. in St. Louis	1.23	4	U. of California at Berkeley	1.59	3	Washington U. in St. Louis	1.54						
8	North Carolina State U.	0.97	5	Stanford U.	1.58	4	Florida State U.	1.52						
9	U. of Pennsylvania	0.76	6	U. of North Carolina at Chapel Hill	1.57	5	State U. of New York at Albany	1.29						
10	U. of Pittsburgh	0.70	7	Princeton U.	1.53	6	Columbia U.	1.28						
Business Administration														
1	U. of Illinois at Chicago	1.91	8	U. of California at Riverside	1.48	7	U. of Michigan at Ann Arbor	1.20						
1	U. of Washington	1.91	9	U. of Alaska at Fairbanks	1.17	8	Boston U.	1.19						
3	Washington U. in St. Louis	1.79	10	Yale U.	1.09	9	U. of North Carolina at Chapel Hill	1.15						
4	U. of Chicago	1.67	History						10	U. of Wisconsin at Madison	1.12			
5	U. of Michigan at Ann Arbor	1.60	1	Princeton U.	2.01	Sociology								
6	U. of Minnesota-Twin Cities	1.56	2	Johns Hopkins U.	1.93	1	Harvard U.	2.23						
7	Indiana U. at Bloomington	1.03	3	Harvard U.	1.92	2	U. of Pennsylvania	2.00						
8	U. of Pittsburgh	0.84	4	U. of Maryland at College Park	1.79	3	New York U.	1.84						
9	Saint Louis U.	0.79	5	Yale U.	1.77	4	Princeton U.	1.81						
10	U. of Rochester	0.72	6	Loyola U. Chicago	1.75	5	U. of Wisconsin at Madison	1.75						
Chemical Engineering														
1	California Institute of Technology	2.07	6	New York U.	1.75	6	Duke U.	1.73						
2	U. of Texas at Austin	1.79	8	Ohio State U.	1.72	7	U. of North Carolina at Chapel Hill	1.67						
3	U. of California at Berkeley	1.71	9	Rice U.	1.71	8	Johns Hopkins U.	1.64						
4	U. of Washington	1.68	10	Northwestern U.	1.60	9	U. of Chicago	1.58						
5	U. of Pennsylvania	1.65	Industrial Engineering						10	U. of Washington	1.45			
6	Cornell U.	1.59	1	U. of Wisconsin at Madison	2.18	Spanish								
6	Stanford U.	1.59	2	U. of California at Berkeley	1.71	1	Vanderbilt U.	1.73						
8	U. of Colorado at Boulder	1.48	3	U. of Illinois at Urbana-Champaign	1.66	2	Rutgers U. at New Brunswick	1.58						
9	Johns Hopkins U.	1.46	4	Worcester Polytechnic Institute	1.60	2	U. of California at Davis	1.58						
9	U. of Illinois at Urbana-Champaign	1.46	5	U. of Illinois at Chicago	1.34	4	Florida State U.	1.54						
Comparative Literature														
1	Vanderbilt U.	1.71	6	U. of Massachusetts at Amherst	1.29	5	U. of Virginia	1.28						
2	Harvard U.	1.70	7	Pennsylvania State U.	1.27	6	Georgetown U.	1.25						
3	U. of California at Berkeley	1.66	8	Columbia U.	1.26	7	Indiana U. at Bloomington	1.12						
4	Princeton U.	1.59	9	State U. of New York at Buffalo	1.12	8	State U. of New York at Stony Brook	1.10						
5	Stanford U.	1.35	10	Ohio State U.	1.07	9	New York U.	1.08						
6	State U. of New York at Stony Brook	1.32	Marine Biology and Biological Oceanography						10	Emory U.	1.06			
7	U. of North Carolina at Chapel Hill	1.24	1	Massachusetts Institute of Technology	1.86	Teacher Education and Professional Development								
8	Yale U.	1.23	2	U. of Washington	1.48	1	U. of California at Berkeley	2.42						
9	U. of California at Los Angeles	1.13	3	U. of California at Santa Barbara	1.38	2	U. of Michigan at Ann Arbor	2.00						
10	U. of Wisconsin at Madison	1.02	4	U. of Hawaii	1.30	3	San Diego State U.*	1.85						
Ecology and Evolutionary Biology														
1	Washington U. in St. Louis	1.95	5	U. of Southern California	1.20	4	U. of Miami	1.58						
2	Emory U.	1.79	6	U. of South Carolina at Columbia	1.10	5	U. of Wisconsin at Madison	1.49						
3	Indiana U. at Bloomington	1.74	7	State U. of New York at Stony Brook	0.95	6	Vanderbilt U.	1.42						
4	Harvard U.	1.46	8	Florida State U.	0.81	7	Syracuse U.	1.39						
5	Princeton U.	1.45	9	Rutgers U. at New Brunswick	0.77	8	U. of New Mexico	1.24						
6	U. of Illinois at Urbana-Champaign	1.44	9	U. of California at San Diego	0.77	9	U. of Texas at Austin	0.97						
7	Yale U.	1.27							10	U. of Southern Mississippi	0.96			
8	Georgia Institute of Technology	1.12												
9	Duke U.	1.11												
10	Cornell U.	1.09												

* San Diego State's Ph.D. programs are offered in conjunction with the U. of California at San Diego.

recent index, which examines faculty productivity for the year 2005, has expanded to rate a total of 7,294 programs and 177,816 faculty members at 354 institutions.

Universities pay \$10,000 to \$30,000 a year for a three-year subscription to the service, depending on how many graduate programs they have, and get to pick 10 peer institutions with which they would like to be compared. So far, about 30 institutions have signed up.

The index relies on Scopus, a database that compiles journal publication and citation data from more than 15,000 journals, while it counts books using Amazon.com, whose database matches the Library of Congress catalog.

The index incorporates grant data collected either from federal agencies directly or from information on their Web sites, including from the

National Institutes of Health, the National Science Foundation, and the National Endowment for the Humanities, among others, though notably not the Department of Defense, since it does not release data on grants to individuals.

The company collects information on honors and awards from the Web sites of 55 organizations, including those that grant Nobel Prizes and MacArthur fellowships.

The variables are weighted differently depending on the program. For example, in fields such as chemical engineering, where books are not considered a crucial measure of productivity, they are not calculated as part of the rankings. And in some fields where honors and awards are not considered important, such as animal science, those are not included.

How the Index Works

THE 2005 Faculty Scholarly Productivity Index, by Academic Analytics, a company owned partially by the State University of New York at Stony Brook, ranks 7,294 individual doctoral programs in 104 disciplines at 354 institutions. It also ranks institutions in broader categories, like the humanities and biological sciences, as well as institutions as a whole.

Institutions are categorized as large research universities (those with 15 or more Ph.D. programs) and small research universities.

For a program to be included in the 2005 index, it must have 10 or more faculty members, or, if it has fewer, it must have one-half the median number of faculty members for a program in that discipline.

The index examines faculty members who are listed on a Ph.D. program's Web sites, and includes a total of 255,475 names. A professor listed in both history and American studies would be counted twice. But at the next level of aggregation (the humanities in this case), the professor would be counted only once. The index creators call this "de-duplication." The total number of actual faculty members rated by the index is 177,816.

The productivity of each named faculty member is measured, although the data are aggregated before being published. Faculty members can be judged on as many as three factors, depending on the most important variables in the given discipline: publications, which can include the number of books and journal articles published as well as citations of journal articles; federal-grant dollars awarded; and honors and awards.

For each discipline, Academic Analytics assigns a weight to each variable. Publications, which include journal articles, citations of those articles, and in some cases, books, count as 60 points out of 100. For books to be included, more than 10 percent of the programs in that discipline must have had at least one book published by a faculty member. (For instance, books are not counted in chemical engineering.)

Books that were published from 2001 to 2005 were recorded using Amazon.com's database. When books are included, their weight is five times that of journal articles. Journal articles are counted for the years 2003, 2004, and 2005. The index uses Scopus, an abstract-and-citation database that covers more than 15,000 peer-reviewed

journals.

Grants count as 30 points out of the 100, if they meet a threshold of importance in a particular discipline—that more than 50 percent of the programs in that discipline have received a federal grant. Grant data from 2003, 2004, and 2005 were collected from the National Institutes of Health, the National Science Foundation, the U.S. Department of Education, the National Endowment for the Humanities, and the U.S. Department of Agriculture, along with some from the Department of Energy.

The NEH and Energy Department grants were counted as awards and honors, however, because of the limited information on grants made available by the Energy Department and the very small number of grants awarded by the NEH.

Awards and honors count as 10 points out of 100, as long as more than 10 percent of the programs in the discipline have received awards. Data are collected from the Web sites of 55 organizations that grant awards and honors and are matched to names and programs.

Awards considered more prestigious are given more weight than others. For example, most awards, like Fulbrights, are counted only if they were awarded between 2001 and 2006. But a Nobel Prize can be counted in the 2005 index if it was awarded within the past 50 years.

If one or more variables are not used in the calculation of faculty productivity, that part of the equation is removed and the point scale reduced accordingly. So if honors are not included, the total possible score is reduced to 90 from 100. Institutions that pay for the data have the ability to reweight the variables in any category, according to their preferences, so they can use the raw data as they please.

The faculty's scholarly productivity in each program is expressed as a z-score, a statistical measure that reveals how far and in what direction a value is from the mean. The z-score allows the performance of programs to be compared across disciplines. A z-score of zero indicates that the program is at the national mean for the discipline; a z-score of 1 indicates that the program is one standard deviation unit higher than the national mean. ■



FILLING THE BREACH

While the Faculty Scholarly Productivity Index is not meant expressly to compete with the National Research Council study, it is hard to separate some university officials' dissatisfaction with the council from their interest in the new index.

Harvey Waterman, associate dean for academic affairs at Rutgers University at New Brunswick, serves on an advisory panel for the council's study, and is also an adviser to Academic Analytics. He says the scope of the research council study is so great— it measures more variables and collects more data on programs than Academic Analytics— that it is naturally limited in what it can do. And in preparing its updated rankings, the council ran into roadblocks before it could collect data because officials there had trouble raising enough money. "Everyone was very unhappy about the delay," says Mr. Waterman.

Once the study got enough financing, partly from government agencies and private foundations, and partly by charging participating institutions up to \$20,000 each, he says, the data-collection process was rushed. "This was causing a certain amount of trouble," he adds.

"It's been frustrating," says Karen P. DePauw, dean of the graduate school at Virginia Tech. "The amount of data needed is sometimes overwhelming with the timelines."

The other problem, say graduate officials, is that some of the agencies that pay for the study wanted it to emphasize programs' reputations, as did the 1995 study, which devoted one set of rankings entirely to faculty perceptions of programs. But universities have largely objected to that emphasis, and have been anxious about which direction the new report will take.

Charlotte V. Kuh, director of the council's study, says its latest version relies less on reputations. "The measures of perceived quality are actually grounded in things that can be measured," she says, such as publications and citations. Other data will round out the picture, including information on graduation rates and how long it takes students to get their degrees.

That is a notable difference between the council's study and Academic Analytics' index. The former takes into account factors that directly influence graduate students, such as whether doctoral students get university-paid health-care benefits, whether teaching assistants have a collective-bargaining agreement, and the graduate student body's racial makeup. Both faculty members and graduate students were questioned for the council's latest study.

As for the financing delay, Ms. Kuh says, it couldn't be helped. The study was originally scheduled to be finished in 2005, but the data will not be available until the end of this year, with analytical essays and follow-up reports coming out in 2008. And now officials "are complaining because they are having to collect data that they should have had already." The process is continuing, she says, because the National Research Council is letting institutions themselves weigh in on how the productivity of their own scholars should be measured. "That takes work and that takes time," she says.

Academic Analytics' index, Ms. Kuh says, is a very different animal. In the end, she predicts, the two indexes will most likely complement each other.

THE DATA

Academic Analytics' clients say they know what they are getting: a focused, specific set of rankings. "It's both credible and transparent," says Cincinnati's Mr. Jackson. He notes that the company explains its methodology clearly, and gives colleges the ability to reweight rankings according to their preferences, which departments at Cincinnati have done informally. For example, if an institution wants to discount grant awards and see how its programs stack up, it can do that. Mr. Jackson says the Cincinnati graduate school has also been using the data as part of its internal review process. That will help administrators there follow departments over a defined period of time, he hopes.

Mr. Thach, of Washington University, is particularly interested in the new index because it allows high-performing programs to be recognized before their reputations have caught up. And he has been pleased with how Washington has performed so far.

For example, in the 2005 index the university ranks seventh over all in the category of large research universities, behind only Harvard, the California Institute of Technology, the University of California at San Francisco, the Massachusetts Institute of Technology, Yale, and Carnegie Mellon University. It also ranks sixth over all in the hu-

Top Research Universities in the 2005 Faculty Scholarly Productivity Index

The 2005 index compiles overall institutional rankings on 166 large research universities, which include 15 or more Ph.D. programs, as well as 61 smaller research universities, which contain between one and 14 Ph.D. programs. Here are the top 50 large research universities and the top 20 smaller ones.

Rank	Institution	Faculty Scholarly Productivity Index	Number of programs
Large Research Universities			
1	Harvard U.	+1.68	38
2	California Institute of Technology	+1.59	19
2	U. of California at San Francisco	+1.59	15
4	Massachusetts Institute of Technology	+1.44	26
5	Yale U.	+1.35	55
6	Carnegie Mellon U.	+1.18	27
7	Washington U. in St. Louis	+1.16	33
8	Vanderbilt U.	+1.09	48
9	Johns Hopkins U.	+1.08	49
10	Duke U.	+1.07	52
11	U. of Pennsylvania	+1.06	55
12	Princeton U.	+1.03	43
12	U. of California at Berkeley	+1.03	70
14	U. of Wisconsin at Madison	+0.90	83
15	New York U.	+0.89	56
15	Stanford U.	+0.89	52
17	U. of Washington	+0.82	79
18	U. of Virginia	+0.81	48
19	State U. of New York at Stony Brook	+0.80	41
20	Cornell U. endowed colleges	+0.73	68
20	Dartmouth College	+0.73	21
22	Emory U.	+0.71	41
22	Rice U.	+0.71	27
24	Georgia Institute of Technology	+0.69	29
25	U. of North Carolina at Chapel Hill	+0.67	56
26	Columbia U.	+0.66	59
27	U. of Michigan at Ann Arbor	+0.65	74
28	Northwestern U.	+0.64	46
28	Pennsylvania State U.	+0.64	85
28	U. of California at San Diego	+0.64	33
31	U. of Maryland at College Park	+0.60	68
32	U. of Southern California	+0.57	58
33	U. of Chicago	+0.56	40
34	U. of Illinois at Urbana-Champaign	+0.55	71
35	Case Western Reserve U.	+0.54	34
36	City U. of New York Graduate Center	+0.52	31
37	U. of Iowa	+0.46	66
38	Michigan State U.	+0.43	76
38	U. of California at Los Angeles	+0.43	64
38	U. of California at Santa Barbara	+0.43	46
41	U. of California at Davis	+0.41	60
41	U. of Kentucky	+0.41	50
43	U. of California at Irvine	+0.40	36
44	U. of Illinois at Chicago	+0.34	43
45	Indiana U. at Bloomington	+0.31	62
46	Boston U.	+0.30	32
46	Purdue U.	+0.30	57
46	Rensselaer Polytechnic Institute	+0.30	23
46	U. of California at Riverside	+0.30	36
50	U. of Texas at Austin	+0.28	68
Small Research Universities			
1	DePaul U.	+0.41	5
2	San Diego State U.*	+0.32	10
3	Bryn Mawr College	+0.16	2
4	Wright State U.	+0.13	6
5	U. of Alaska at Fairbanks	-0.05	14
5	U. of Massachusetts at Boston	-0.05	7
7	Clarkson U.	-0.18	13
8	College of William and Mary	-0.19	8
9	U. of Colorado at Denver	-0.24	6
10	Central Michigan U.	-0.30	5
11	U. of Missouri at St. Louis	-0.31	11
12	Clark U.	-0.41	8
12	Rutgers U. at Newark	-0.41	11
14	Illinois State U.	-0.46	5
15	Southern Methodist U.	-0.52	14
16	Duquesne U.	-0.53	14
17	Northern Arizona U.	-0.54	6
17	Northern Illinois U.	-0.54	10
17	Wesleyan U.	-0.54	8

manities. Its political-science program ranks No. 1, not 24, where it placed in the National Research Council's 1995 study's reputational rankings. Academic Analytics' index ranks Washington's English program at fourth place, compared with 50th place in the 1995 council study. Its French program comes in fourth according to the 2005 index, compared with 17th in the 1995 study.

"Reputations take decades to build," notes Mr. Thach, while Academic Analytics' rankings recognize programs that are up and coming.

But a close look at other data in the index has some college officials raising their eyebrows. The University of Georgia's No. 2 ranking in English, for instance, has caused some scoffing. Say you have an exceptionally bright undergraduate poised to enter graduate school in English, says one university administrator who did not want to be named: "Would you really recommend the person attend the University of Georgia? It's where this unidimensional figure gets out of touch."

There are anomalies in other fields too. In economics the 1995 council study put Stanford, the University of California at Berkeley, and Northwestern University in the top 10 of its reputational ranking. That was compiled after asking nearly 8,000 graduate-school professors their opinions of the scholarly quality of programs' faculties and their effectiveness in educating students. Academic Analytics' index omits all three institutions from its economics top 10, which include the University of Wisconsin at Madison and the University of California at San Diego.

In political science the 1995 council study included Berkeley, Stanford, the University of Chicago, and the University of California at Los Angeles in its top 10. None of those appears in the 2005 index's top-10 list, though the University of Kansas and the University of Maryland at College Park do. And in physics, the council put Princeton at No. 2 and MIT at No. 3. Neither make Academic Analytics' top 10.

Lydia S. Snover, director of institutional research at MIT, explains that Academic Analytics' methodology may be part of the problem.

Because the company counts only faculty members listed under specific departments, it missed some scientists connected to MIT's numerous interdisciplinary research centers. Some of those scholars are the principal investigators on multimillion-dollar grants that other physics faculty members also work on, says Ms. Snover. But those grants and the scholars' publications did not get counted in the physics rankings.

Mr. Martin counters that faculty members who are purposely not listed on a program's Web site should not be counted, because if they were heavily involved with graduate students, an important criterion for being part of a graduate program, they would be listed.

IMPERFECT METHODS?

Other critics agree that Academic Analytics has compiled flawed faculty lists. The company uses a Web-crawling service to pull names from department Web sites and then sends each university the list, hoping administrators will send back a corrected version. Last year 133 institutions complied, but the other 141 institutions in the index did not. Some universities refused to do work for a service they were not paying for, especially one that others were profiting from.

Carol B. Lynch, a senior scholar in residence at the Council of Graduate Schools and a former graduate dean at the University of Colorado at Boulder who is on the National Research Council's oversight committee, finds the company's approach misguided. "I'm skeptical of a competitor that feels they can just sort of pull things out of the air," she says. "That's probably a little bit naïve."

Alison Power, graduate dean at Cornell, is likewise wary of Academic Analytics' data-collection methods. "They don't have very good checks," she says. A lot of potential customers saw the early mistakes in the faculty lists, and the time commitment that would be involved in correcting them, and balked.

"People just kind of said, No, forget it," Ms. Power says. "And so people aren't taking it seriously."

Other universities would consider signing up, though, if the methods changed slightly. Julie Carpenter-Hubin, director of institutional research and planning at Ohio State University, was originally intrigued by the index. But she did not want to shell out tens of thousands of dollars unless she could get the names of individual faculty members connected to their scholarly output.

Information the company collects on individual faculty members is aggregated before being published, Mr. Martin says, because such raw data are vulnerable to misinterpretation and misuse.

Ms. Snover at MIT adds that there is still the question of how to count publications. Academic Analytics puts great weight on faculty members' publication records, but those counts don't necessarily translate to the highest-quality work.

Mr. Martin says citations and grants do indicate quality, so the results should balance out. Some officials counter that no adequate citation index exists for the humanities, and Ms. Snover, for one, remains unconvinced. "I think reputational surveys do have a function in these kinds of rankings," she says.

Mr. Martin says that Academic Analytics' data cannot present a perfect reflection of every faculty member's scholarly impact. By taking a particular view of productivity, though, the data can indicate important information about the quality of programs as a whole.

"We think it provides significant contextual information," he says. "Are there some counterintuitive results? Absolutely," he says. But that just means it might be worth taking a second look at the University of Georgia's English department, for instance, to see what's going on there.

As for the complaints he has heard about the for-profit nature of the company, Mr. Martin says, Academic Analytics is aiming for only a 10- to 15-percent profit margin, if it can get about 50 clients total. "I'm a dean. I didn't go into academe to make a lot of money," he says, but "somebody's got to pay the bills."

Ben Ware, dean of the graduate school at Syracuse University, who has subscribed to the index, says that mistakes are a natural part of such rankings. "It's very difficult to make measurements with no errors," he says.

But as long as one keeps the magnitude of error in mind, he adds, universities can still learn valuable things from the information.

For example, deans can learn whether new hires have improved the publication or grant records of specific programs. They can predict how some departments' productivity might change with impending retirements. The data could also identify general areas where there might be deadwood worth culling.

Virginia Tech's Ms. DePauw agrees. "We can criticize a process," she says, but she prefers to work with Academic Analytics to get the best from it. "I'm not into it for precise rankings or precise comparisons," she says. Besides, her faculty members know which departments are the top in their fields anyway. She's more concerned with tracking internal trends.

Once professors and administrators see some of the 2005 data, they will have a chance to reconsider the index's worth, and some naysayers may be won over. But only after the National Research Council comes out with the next installment of its rankings will it become clear how seriously academe will take Academic Analytics. For now, it's the only game in town.

Richard Wheeler, dean of the Graduate College at the University of Illinois at Urbana-Champaign and a member of the National Research Council's oversight committee, at first denigrated Academic Analytics. "It just doesn't inspire confidence in me," he said.

But after being told how his university performed in the 2005 rankings, his tone shifts slightly: "If it turns out we do very well in them, I'll probably think they're great." ■