

Determined challengers keep heat on the elite

Familiar names fill the top ranks, but our tables, which have been refined to provide even more detail this year, show that those at the summit cannot afford to rest on their laurels, **John O'Leary** writes

A year after *The Times Higher* published its first World University Rankings, fascination with international comparisons of universities is undiminished. Readers from every part of the globe pored over the results, and there has been a lively debate about how best to assess universities.

For consistency's sake, these rankings follow a similar pattern to last year's. But improvements include a bigger poll of academics, more complete statistics and the addition of a survey of global recruiters, all courtesy of QS Quacquarelli Symonds.

The presentation of the main table has also been altered, both for accessibility and in response to discussions in a Unesco expert working group on international rankings. Each measure is now scored out of 100 (whatever weighting is applied) so that universities' performance on the different criteria is clearer. And the overall score has been calculated to just three significant figures, rather than last year's four, to avoid claiming what members of the group considered "spurious accuracy".

When the first ranking appeared, we stressed that the methodology was not sufficiently precise to separate universities whose scores were closely bunched. The new approach groups together many universities, particularly outside the top 50, and more realistically represents relative strengths.

Critics of peer review queried whether a ranking so heavily reliant on opinion sampling would be too volatile from year to year to be credible. But the results show encouraging stability. Harvard University is still well ahead of the pack, and nine of last year's top ten remain in that group. Yet there has been significant movement. The Massachusetts Institute of Technology

is now Harvard's closest challenger, and Cambridge University has leapfrogged Oxford University to take third place. The University of California, Berkeley, has slipped from second, and ETH Zurich has dropped out of the top ten.

There have been relatively few dramatic rises or falls. Duke University, in North Carolina, is perhaps the most obvious, jumping to 11th place from outside the top 50. But its new ranking is more in line with its position in the domestic league tables produced by *US News & World Report*, which put it in joint fifth with Stanford University and MIT. Other big risers include the Ecole Polytechnique, which enters the top ten from 27th place in 2004, and Bristol University, up more than 40 places to enter the top 50. Six of the top 100 were not in last year's ranking, and there are many new entries lower down.

As before, the overall positions disguise considerable variations among the six indicators. Even Harvard emerges as the top university only in the two opinion surveys. It is second to the California Institute of Technology on citations but has relatively low scores for its staff-to-student ratio and the proportions of international staff and students.

The new employer survey correlates well with the academic peer review, particularly towards the top of the table. The London School of Economics (fourth in recruiters' eyes) is the only top institution to be much more popular with employers than with academic peers. Most leading US universities do well.

The Ecole Polytechnique owes its spectacular rise partly to the best staffing level in this year's survey. This indicator sees high scores scattered throughout the

ranking. Showa University, in Japan, in 198th place, and Russia's Novosibirsk University (169th) both outperform the top nine in the overall ranking on this measure.

The LSE again has the highest proportion of international students, with Australian universities repeating last year's strong showing. The City University of Hong Kong pips the LSE to first place for proportion of international staff, with ETH Zurich close behind. The two measures each carry a weighting of 5 per cent with correspondingly less influence on the final order.

Similarly, the various disciplines also throw up different leaders. Academics see Harvard as pre-eminent in the arts, medicine and social sciences, but Cambridge leads in the sciences and MIT in technology.

Such variety of outcomes underlines that universities have different missions and different strengths that make them difficult to compare. There is no sign that a high-ranking university in our table is better than one more lowly ranked.

However, this exercise focuses on qualities that should be common to universities that

aspire to be global institutions.

While the debate continues on methodology, there has been little argument about the thrust of the world rankings. They strive to be current, rather than historical, and to find proxies for excellence in teaching and research. An international outlook and a global reputation among

academics, students and employers are all important aspects of a university that ranks among the world elite. Other measures will no doubt be added in future rankings, but the original model has proved more robust than many of its critics predicted. This second edition is sure to rekindle the debate, but the search for the world's leading universities is surely unstoppable.

'The new employer survey correlates well with the academic peer review'

'The original model has proved to be more robust than many of its critics predicted'

THE WORLD'S TOP 200 UNIVERSITIES

2005 RANK	2004 RANK	NAME	COUNTRY	PEER REVIEW SCORE (40%)	RECRUITER REVIEW (10%)	INT'L FACULTY SCORE (5%)	INT'L STUDENTS SCORE (5%)	FACULTY/STUDENT SCORE (20%)	CITATIONS/FACULTY SCORE (20%)	OVERALL SCORE
1	1	Harvard University	US	100	100	17	23	21	57	100.0
2	3	Massachusetts Institute of Technology	US	84	87	12	41	16	53	86.9
3	6	Cambridge University	UK	96	73	65	34	20	16	85.8
4	5	Oxford University	UK	93	70	58	37	23	15	83.9
5	7	Stanford University	US	78	95	10	30	12	56	83.4
6	2	University of California, Berkeley	US	95	62	7	13	7	39	80.6
7	8	Yale University	US	71	43	52	27	42	19	72.7
8	4	California Institute of Technology	US	48	2	27	41	26	100	71.5
9	9	Princeton University	US	69	32	22	30	20	31	64.8
10	27	Ecole Polytechnique	France	37	17	47	36	100	4	61.5
11=	52	Duke University	US	36	79	24	20	66	10	59.1
11=	11	London School of Economics	UK	43	86	99	100	20	1	59.1
13	14	Imperial College London	UK	59	15	63	51	34	10	59.0
14	23	Cornell University	US	56	71	11	19	17	23	58.1
15	17	Beijing University	China	71	37	7	4	26	0	56.3
16	12	Tokyo University	Japan	73	2	2	12	19	17	55.1
17=	20	University of California, San Francisco	US	24	0	4	6	91	44	54.9
17=	13	University of Chicago	US	52	47	29	29	27	16	54.9
19	22	Melbourne University	Australia	66	27	53	36	9	7	54.5
20	19	Columbia University	US	56	36	11	32	25	17	53.9
21	10	ETH Zurich	Switzerland	49	7	98	35	37	8	53.5
22	18	National University of Singapore	Singapore	62	12	94	45	8	7	53.0
23	16	Australian National University	Australia	64	8	52	33	13	13	52.9
24=	30	Ecole Normale Supérieure, Paris	France	38	23	26	23	65	9	51.6
24=	21	McGill University	Canada	52	48	33	31	23	8	51.6
26	15	University of Texas at Austin	US	47	29	9	15	7	54	51.5
27	25	Johns Hopkins University	US	50	14	17	20	21	32	50.2
28	34	University College London	UK	46	19	45	46	30	10	48.4
29	37	University of Toronto	Canada	51	34	40	14	6	22	47.8
30	48	Edinburgh University	UK	48	47	33	28	15	10	47.7
31	29	Kyoto University	Japan	57	2	20	9	28	10	47.5
32	28	Pennsylvania University	US	42	41	20	25	28	15	47.3
33	33	Monash University	Australia	55	19	54	49	7	5	46.5
34	32	Ecole Polytech Fédérale de Lausanne	Switzerland	22	3	95	65	64	3	45.0
35	43	Manchester University & Umist	UK	43	50	47	23	18	6	44.8
36	31	University of Michigan	US	46	32	17	19	17	15	43.9
37	26	University of California, Los Angeles	US	52	6	2	11	12	24	43.3
38=	46	University of British Columbia	Canada	47	12	63	18	6	17	42.6
38=	40	Sydney University	Australia	53	4	53	31	7	8	42.6
40	36	University of New South Wales	Australia	50	12	53	34	11	4	42.5
41	39	Hong Kong University	Hong Kong	43	19	82	21	17	4	42.0
42	24	University of California, San Diego	US	43	0	3	9	10	43	41.9
43	42	Hong Kong University Sci & Technol	Hong Kong	43	12	93	28	7	11	41.8
44	38	Carnegie Mellon University	US	37	33	34	40	18	10	40.5
45	47	Heidelberg University	Germany	47	12	11	28	14	11	39.6
46	73	Northwestern University	US	28	66	4	20	20	16	39.1
47	49	Queensland University	Australia	46	8	53	24	8	7	38.5
48	50	Nanyang Technological University	Singapore	38	12	95	53	7	2	38.2
49	91	Bristol University	UK	28	63	40	25	13	10	37.2
50	41	Indian Institutes of Technology	India	44	11	1	1	10	20	37.0
51	84	Chinese University of Hong Kong	Hong Kong	37	12	73	17	14	6	36.4
52	67	Auckland University	New Zealand	45	0	20	25	18	2	35.8
53	78	Delft University of Technology	Netherlands	35	3	55	17	25	3	35.0
54	75	Boston University	US	41	3	10	22	16	10	34.9
55	99	Munich University	Germany	39	24	11	21	11	8	34.8
56	79	New York University	US	36	15	5	18	24	6	34.4
57	64	Erasmus University Rotterdam	Netherlands	27	32	19	13	5	31	34.0
58=	109	Washington University, St Louis	US	25	14	6	17	28	22	33.7
58=	98	Amsterdam University	Netherlands	36	14	18	18	12	14	33.7
58=	35	University of Illinois	US	39	16	12	16	11	9	33.7
61	59	Purdue University	US	36	28	25	20	8	8	33.6
62=	129	Helsinki University	Finland	39	15	12	5	16	7	33.4
62=	61	Tsing Hua University	China	42	4	25	10	18	1	33.4
64	130	Pennsylvania State University	US	34	21	2	1	11	21	33.3
65	94	Vienna University	Austria	40	3	26	26	4	14	33.1
66	63	Copenhagen University	Denmark	39	13	20	4	15	5	32.8
67	68	Macquarie University	Australia	34	22	53	42	4	5	32.7

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68	45	Massachusetts University	US	38	0	1	12	7	23	32.5
69	-	IEP Sciences Po, Paris	France	19	16	25	50	43	-	32.2
70	83	Eindhoven University of Technology	Netherlands	20	3	33	7	54	2	32.0
71	61	Brown University	US	27	6	39	19	19	16	31.9
72	195	Fudan University	China	35	26	13	6	17	1	31.3
73=	96	King's College London	UK	27	17	45	28	17	6	31.1
73=	86	Rochester University	US	24	9	10	24	32	13	31.1
73=	66	University Wisconsin-Madison	US	36	0	0	14	17	11	31.1
76	-	Brussels Free University (French)	Belgium	29	3	31	41	20	6	30.9
77=	93	Hebrew University of Jerusalem	Israel	36	0	5	13	5	22	30.8
77=	80	Warwick University	UK	30	21	50	37	7	4	30.8
79	92	Lomonosov Moscow State University	Russia	42	3	10	7	11	3	30.7
80=	96	University of Western Australia	Australia	29	12	53	29	10	8	30.4
80=	56	Adelaide University	Australia	33	0	53	30	8	8	30.4
82	55	RMIT University	Australia	35	0	53	62	4	1	30.3
83	128	Durham University	UK	24	38	46	22	9	9	30.0
84	-	Indian Institutes of Management	India	33	24	2	7	21	-	29.9
85	-	Zurich University	Switzerland	22	0	65	22	29	5	29.6
86	77	Vienna Technical University	Austria	33	7	31	32	11	3	29.5
87	113	University of Technology, Sydney	Australia	35	4	53	37	4	1	29.4
88=	-	Geneva University	Switzerland	12	3	93	57	29	7	29.2
88=	74	Washington University	US	28	0	16	10	14	22	29.2
88=	57	Pierre and Marie Curie University	France	31	0	25	36	15	6	29.2
88=	-	Catholic University of Leuven (French)	Belgium	32	5	17	26	9	12	29.2
92	-	Ecole Normale Supérieure, Lyon	France	16	0	30	18	39	16	29.1
93=	154	China University of Sci & Technology	China	33	4	6	0	27	1	28.9
93=	118	Seoul National University	South Korea	39	0	3	5	14	4	28.9
95=	-	Catholic University of Leuven (Flemish)	Belgium	24	10	48	20	23	4	28.8
95=	195	National Autonomous Univ of Mexico	Mexico	33	9	3	1	25	0	28.8
97	170	Nottingham University	UK	22	38	39	30	10	6	28.7
98	142	La Trobe University	Australia	34	0	53	26	6	3	28.6
99	51	Tokyo Institute of Technology	Japan	30	0	6	16	22	10	28.5
100	58	Sussex University	UK	28	0	44	28	15	7	28.4
101=	112	Glasgow University	UK	26	27	18	15	13	8	28.3
101=	76	Curtin University of Technology	Australia	30	0	54	63	4	1	28.3
103=	133	Leeds University	UK	27	22	30	26	10	6	28.2
103=	44	School of Oriental and African Studies	UK	20	2	51	74	23	-	28.2
105=	118	Virginia University	US	24	29	7	11	13	14	28.0
105=	95	Technical University Munich	Germany	27	12	11	30	16	9	28.0
105=	69	Osaka University	Japan	28	0	7	8	23	12	28.0
108	-	Wageningen University	Netherlands	16	3	28	47	29	12	27.9
109=	137	York University	UK	28	5	37	28	12	7	27.8
109=	88	Case Western Reserve University	US	20	11	4	22	23	19	27.8
111	87	Trinity College, Dublin	Ireland	31	14	17	21	5	8	27.6
112=	125	Humboldt University Berlin	Germany	32	0	11	18	16	4	27.4
112=	100	Queen Mary, University of London	UK	24	3	44	35	18	4	27.4
114=	156	Vanderbilt University	US	18	12	2	14	32	14	27.2
114=	102	National Taiwan University	Taiwan	36	0	4	1	15	3	27.2
114=	85	Göttingen University	Germany	33	0	11	17	12	7	27.2
117	138	Dartmouth College	US	19	19	15	16	21	15	27.1
118	-	Queensland University of Technology	Australia	34	0	53	21	3	2	27.0
119	151	Liverpool University	UK	25	14	35	21	11	8	26.9
120	120	Utrecht University	Netherlands	27	3	33	5	12	13	26.8
121=	-	Chulalongkorn University	Thailand	33	16	11	1	12	0	26.7
121=	116	Michigan State University	US	31	11	11	12	8	9	26.7
121=	71	Université Paris 1 Panthéon Sorbonne	France	38	0	13	26	4	-	26.7
124	180	University of Southern California	US	25	12	7	28	17	9	26.6
125=	162	La Sapienza University, Rome	Italy	39	0	5	5	4	5	26.5
125=	105	Texas A&M University	US	30	9	14	13	6	13	26.5
127=	-	Basel University	Switzerland	12	0	88	28	26	10	26.4
127=	-	University of Newcastle	Australia	30	0	53	25	5	5	26.4
129	167	Nagoya University	Japan	21	0	9	13	35	6	26.3
130	103	Bath University	UK	18	35	47	34	7	7	26.2
131	132	University Louis Pasteur Strasbourg	France	24	3	25	35	11	12	26.1
132	177	Université de Montréal	Canada	25	6	55	11	5	13	26.0
133=	-	Lausanne University	Switzerland	17	2	53	26	27	6	25.9
133=	134	Maryland University	US	22	15	18	16	13	13	25.9

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133=	-	HEC Paris	France	15	46	77	30	8	-	25.9
136=	153	Tohoku University	Japan	26	0	7	11	19	11	25.7
136=	70	St Andrews University	UK	19	11	39	48	13	8	25.7
138=	131	Leiden University	Netherlands	22	8	25	15	14	14	25.6
138=	127	Aarhus University	Denmark	27	6	28	7	12	9	25.6
138=	101	Oslo University	Norway	29	0	25	16	13	5	25.6
141	173	Emory University	US	16	15	1	12	30	13	25.5
142	157	Frankfurt University	Germany	33	0	11	17	7	6	25.3
143=	160	Korea Advanced Inst of Sci and Tech	South Korea	26	0	22	4	7	19	25.2
143=	150	Sheffield University	UK	21	16	34	27	12	7	25.2
143=	126	Birmingham University	UK	21	17	36	30	10	8	25.2
143=	117	North Carolina University	US	21	14	9	8	13	19	25.2
147=	-	Hiroshima University	Japan	26	0	7	8	25	4	25.1
147=	65	Georgia Institute of Technology	US	27	8	5	28	8	11	25.1
149	166	University of Alberta	Canada	24	2	52	11	13	7	25.0
150=	192	Nanjing University	China	34	0	12	5	11	1	24.8
150=	-	St Gallen University	Switzerland	2	14	85	59	37	-	24.8
150=	146	Rice University	US	20	5	14	23	19	14	24.8
150=	82	University of Minnesota	US	25	3	10	12	8	19	24.8
154=	-	University of South Australia	Australia	27	0	53	49	4	1	24.7
154=	145	Technical University of Denmark	Denmark	23	0	21	24	10	15	24.7
154=	60	Technical University Berlin	Germany	30	7	11	25	6	5	24.7
157=	-	Hokkaido University	Japan	28	0	3	7	16	9	24.5
157=	123	Maastricht University	Netherlands	16	5	39	44	20	7	24.5
159=	186	Bologna University	Italy	34	0	7	9	7	3	24.4
159=	165	Georgetown University	US	19	26	9	17	15	11	24.4
159=	143	University of Waterloo	Canada	21	11	75	13	9	5	24.4
159=	72	University of California, Santa Barbara	US	24	0	10	6	6	23	24.4
163	107	Colorado University	US	23	0	17	7	17	13	24.3
164	104	Tufts University	US	15	11	13	18	16	22	24.2
165	164	Innsbruck University	Austria	21	0	44	47	8	9	24.0
166=	161	Tasmania University	Australia	24	0	53	29	6	5	23.8
166=	110	Chalmers University of Technology	Sweden	24	0	18	16	20	4	23.8
168	179	Newcastle upon Tyne University	UK	17	20	34	32	13	7	23.6
169=	-	Shanghai Jiao Tong University	China	25	26	15	5	10	0	23.5
169=	-	Novosibirsk State University	Russia	16	0	2	9	45	-	23.5
169=	89	Malaya University	Malaysia	33	0	12	7	8	1	23.5
172=	-	Free University Berlin	Germany	28	0	11	17	9	6	23.3
172=	-	Kobe University	Japan	24	5	9	9	21	3	23.3
172=	184	Aachen RWTH	Germany	25	12	11	24	11	4	23.3
175=	136	State Univ of New York, Stony Brook	US	24	0	7	15	11	15	23.2
175=	90	Alabama University	US	18	0	4	7	7	32	23.2
177	191	Nijmegen University	Netherlands	17	3	38	11	25	5	23.1
178	198	City University of Hong Kong	Hong Kong	19	0	100	9	8	4	22.7
179	-	Notre Dame University	US	18	24	17	14	13	8	22.0
180=	-	Toulouse 1	France	18	0	25	32	26	0	22.5
180=	171	Lund University	Sweden	24	0	15	16	13	7	22.5
180=	140	Uppsala University	Sweden	24	0	27	8	7	11	22.5
183	159	Madrid Autonomous University	Spain	29	0	5	9	9	6	22.2
184=	-	Korea University	South Korea	28	0	7	2	15	1	22.1
184=	147	McMaster University	Canada	18	8	10	16	7	21	22.1
186=	-	Free University of Amsterdam	Netherlands	17	3	32	14	13	13	22.0
186=	114	Otago University	New Zealand	22	0	31	21	15	3	22.0
188=	-	Tel Aviv University	Israel	25	0	1	1	5	18	21.9
188=	108	Massey University	New Zealand	23	0	62	20	5	2	21.9
190	-	Gothenburg University	Sweden	14	0	27	2	1	37	21.8
191	-	University of Western Ontario	Canada	11	46	28	12	6	13	21.7
192	-	Jawaharlal Nehru University	India	29	0	3	6	10	3	21.5
193	-	Pittsburgh University	US	15	0	23	10	23	11	21.3
194=	176	Helsinki University of Technology	Finland	22	0	11	11	20	2	21.1
194=	158	Technion - Israel Inst of Technology	Israel	23	2	7	1	10	12	21.1
196=	-	Sao Paulo University	Brazil	28	0	10	3	8	3	21.0
196=	122	Royal Institute of Technology	Sweden	19	0	54	22	9	5	21.0
198	-	Showa University	Japan	8	0	7	19	45	3	20.9
199=	-	University of Florence	Italy	28	0	6	5	5	6	20.8
199=	-	George Washington University	US	22	9	5	14	13	4	20.8
199=	-	Wake Forest University	US	12	8	3	6	28	11	20.8

Fine-tuning puts picture in much sharper focus

Today *The Times Higher* publishes the World University Rankings for the second year running. The aim is the same as it was in 2004: to offer a consistent and systematic look at the world's top universities in the context of the globalisation of higher education. But we think that this version is more robust and reliable than the first.

We have gathered new data on employers' opinions of universities around the world (see box on facing page). This has allowed us to widen the pool of information we present, but we have gone further and deepened the pool as well. This year's tables are virtually free of gaps in data. And because we have collected a wealth of data on institutions outside the top 200, we are confident that no institution that should be in these tables has been overlooked. These efforts have resulted in what we believe is the world's best guide to the standing of top universities.

The core of our analysis is peer review, which has long been accepted in academic life and across social research as the most reliable means of gauging institutional quality. The sample used to compile the peer-review column of this table comprises 2,375 research-active academics. They were chosen by QS Quacquarelli Symonds, consultants to *The Times Higher* and experts in international rankings of MBA courses. The selection was weighted so that just under a third of the academics came from each of the world's major economic regions — Asia, Europe and North America — with a smaller number from Africa and Latin America. It also had to yield roughly equal numbers from the main spheres of academic life: science, technology, biomedicine, social sciences and the arts. The selected academics were asked to name the top universities in the subject areas and the geographical regions in which they have expertise.

Data collected in 2005 were supplemented by opinions from our 2004 survey, where the same question was asked but no individual's opinion was counted twice. We believe that this two-year rolling average provides improved statistical reliability.

With its improved accuracy and the inclusion of even more information, the second *Times Higher World Rankings* is the best guide to the world's top universities, says **Martin Ince**

The information derived from the responses was used to generate the faculty-level data on the top institutions for specific subject areas published in *The Times Higher* this month (October 7, 14 and 21 and summarised on pages 14-15) and was aggregated to produce the peer-review column of the main table in this supplement. We are confident that the sample is large enough and sufficiently well chosen for its aggregate opinion to be statistically valid.

The point has been made that peer reviewers might be more likely to cite large old universities, especially those with the name of a major city in their titles, than smaller, less familiar ones. But the peers are all experts in their fields; and in their responses they rated as excellent more than 500 universities, some of which were unknown even to staff of *The Times Higher*.

The peer-review data account for 40 per cent of the available score in the World University Rankings. This is 10 percentage points lower than in 2004 because of the addition of data on the opinion of major international employers of graduates. Like the other columns we show, and in an improvement on the presentation of the data in 2004, we have normalised these data to show the top institution scoring 100.

Two other columns of data in this table account for 20 per cent each of the final score for each university listed. One is the number of citations for academic papers generated by each staff member. This has been compiled from staff numbers collected by QS and citations data supplied by Evidence Ltd on the basis of data from Thomson Scientific. The citations data,

which come from Thomson's Essential Science Indicators, cover the period between 1995 and 2005. A lower cut-off of 5,000 papers has been applied to eliminate small specialist institutions. This criterion provides a clear measure of universities' research prowess, but it has some systematic biases. It disadvantages some institutions, especially those in Asia, that publish few papers in the high-impact journals surveyed.

Teaching is, of course, central to the university mission. To gauge it, we consider a classic measure of commitment to teaching, the staff-to-student ratio, which is worth up to 20 percentage points. Like citations per staff member, this measure depends on accurate staff numbers. We believe we have improved the accuracy of the figures we collect. Nevertheless, any inconsistency is to some extent self-correcting because exaggerating staff numbers would increase a university's staff-to-student ratio but reduce its citations per staff member.

The principal motivation for the World University Rankings is our realisation that although scholarship has always been international, the world of higher education is becoming one of the most global sectors of the world economy. The final two columns of data we show, each accounting for 5 per cent of the total, attempt to quantify universities' international orientation. The first reflects their percentage of international staff and the second their percentage of international students.

Our aim in these tables is to rank large general universities. We have not counted institutions that do not teach undergraduates. This removes from the listing a number of high-prestige institutions, especially in medicine and business. We have, however, included universities that teach a broad but not a full complement of subjects. These range from the London School of Economics to a large number of technology universities.

A frequent query about the 2004 rankings concerned the level of detail they provided. In general, we have tried to tease apart large federal universities such as California or London that consist of many in essence



free-standing colleges. But we have not been able to disaggregate the many US state universities that boast more than one campus. Doing so would have complicated the task too much.

We have managed to remove some ambiguities that were present last year by distinguishing between the Flemish-speaking and Francophone institutions of Belgium and

by providing clearer labelling of the many universities of Paris and other French cities.

As research on composite tables such as these has shown, it is important to read them with care. Although the overall score tells the full story, a specific column may be of more interest to a student or researcher contemplating his or her next move. It would be wrong to attribute too much weight to the

small differences in overall scores between universities lower down the rankings.

We welcome your responses to the World University Rankings and to the faculty-level analyses that *The Times Higher* has already published. In particular, we are interested in suggestions of other measures of university quality that could be gathered consistently from institutions around the world.

Employer opinion

This year's World University Rankings feature an extra column of data designed to add another vital dimension by revealing which universities are taken most seriously by the world's top employers of internationally mobile graduates.

The sample of employers was generated by QS from its own extensive knowledge of graduate recruiters and from universities, which provided names of companies that are frequent recruiters of their graduates. All the companies involved recruit either around the world or on a national scale in large countries. They were asked to identify up to 20 universities whose graduates they prefer to employ most.

The respondents were guaranteed anonymity. They include banks and financial organisations, airlines, manufacturers in areas such as pharmaceuticals and the automotive industry, consumer goods companies, and firms involved in international communications and distribution. There were 333 respondents.

Acknowledgments

The World University Rankings were coordinated by **Martin Ince** (martin@martinince.com), contributing editor of *The Times Higher*.

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Beijing leads Asia's march

Tigers of the Pacific Rim are making their presence felt as more than 50 institutions outside Europe and North America jostle for position in the world's top 200. **Martin Ince** reports

There is good news this year for anyone wanting to see more excellent universities outside Europe and North America. In 2004, we published tables of the top 50 US and European institutions but only the top 40 from the rest of the world — because there were not 50 candidates in our table of the world's top 200. This year the top 200 includes 56 from the rest of the world, and the top 50 appear here.

Our analysis shows that the world's top 14 universities are in the US, the UK and, in one instance, France. The top institution outside this charmed circle is Beijing University, which comes 15th, one place ahead of Tokyo University, which has fallen from 12th slot in 2004.

Then, as now, the rest of the world is a diverse place. The universities we list here are in 13 countries. Some of the countries are affluent — notably Japan with nine entries, Australia with 17 and New Zealand with two. Others, such as China, Hong Kong, India, Singapore and South Korea, are emerging into the globalised economy at varying rates.

But there is no doubt that for the most part, this table reflects excellence in Asia. Only one non-Asian institution features here, the National Autonomous University of Mexico. It is probably the world's largest university in terms of student numbers and is a major force in Mexican public and political life. Unam is joined in the 2005 World University Rankings by São Paulo of Brazil in 196th place. However, no African university comes even close to getting into our top 200.

Despite Australia's dominance of this table, with more than a third of the slots, it is notable that it musters only six of the top 50 universities in the world in our main table, one fewer than in 2004. Perhaps more alarmingly, its flagship institution,



Beijing University (Beijing Daxue, or Bei Da), which was founded in 1898, is one of China's oldest universities.

It was first dubbed the Imperial Capital University, then it was renamed the National Peking University in 1912 after the Xinhai Revolution. In 1920, it became the second university in China to accept female students.

During the Second World War, the university moved to Kunming, the capital of Yunnan Province, but it returned to Beijing in 1946.

After the founding of the People's Republic of China in 1949, it merged with Yenjing University and moved from the city centre to the

Yenjing campus in the northwest. It also dropped "National" from its name,

Today, Beijing is one of the designated "national key universities" and competes with Tsing Hua University for top place.

Beijing University has about 46,000 students — 15,000 undergraduates, 8,000 masters students, 4,000 doctoral candidates, and about 19,000 students taking correspondence courses or night classes.

Beijing also has one of the country's largest intakes of international students, with almost 2,000 enrolled from 62 different countries (about 40 per cent are from South Korea).

While offering a comprehensive range of study courses, Beijing is also heavily geared towards scientific research. It has 216 research institutions, including two



national engineering research centres, 81 key national disciplines and 12 national key laboratories.

The university focuses on research, but in recent years it has also committed itself to improving

teaching standards. It aims to combine research with training the specialised personnel to join China's skill-hungry workforce. Beijing is a member of Universitas 21, the international

the Australian National University, has dropped from 16th in the world in 2004 to 23rd one year on, putting it below Melbourne University. It is also one place behind the National University of Singapore, a notable regional rival.

The lowly position of universities outside America and Europe in these tables suggests a substantial quality gap exists. But there

may be a kinder explanation for the apparent differences. Few universities outside the English-speaking world win any points for highly cited papers in the data available for our rankings. As 20 percentage points are available for citations, this gap makes it all but impossible to get among the top institutions. This applies to Beijing, which makes up for lost ground by having a

to the forefront



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network of research-intensive universities.

Lu Xun, the godfather of modern Chinese literature, is an alumnus, and Mao Zedong was a part-time student. Current academics include Tang Xiaoyan, who

recently won the Vienna Convention Award for her work on ozone layer protection, and Zhai Zhonghe, a cellular biologist who was the first to identify many important fowl infections.

Michael Delaney

healthy staff-to-student ratio and being held in high regard by its global academic peers.

One of the few East Asian institutions with a notable citations score is Tokyo University. It is also well liked by its peers yet it has a surprisingly low profile with our recruiters considering its reputation for educating most of Japan's elite figures. Its emphasis on supplying politicians, public

servants and lawyers rather than personnel for the private sector may explain why.

We include many big general universities in Asia, of which some — such as Korea and Tokyo — are in effect national institutions. But the list also includes a higher proportion of technology and science universities than we feature from other parts of the world, starting with the Hong Kong University of Science and Technology at position 11 in this table and continuing with nine other such institutions. Many, such as Curtin University of Technology in Australia, recruit many staff and students internationally.

It is to be expected that such institutions will gain in standing as Asia becomes a more significant centre for the development, design and manufacture of high-technology products. Their research output and their importance as suppliers of trained people are likely to grow.

The Indian Institutes of Technology are already regarded as vital to India's high-tech growth around Bangalore.

Our data on leading institutions for medical research also indicate that there are few such centres of renown in

Asia (page 11). But the focus on stem-cell research in South Korea, and on nanotechnology, which has many medical applications, suggests that this gap may soon close, pushing Asian institutions up the world rankings. At present, universities in smaller states such as Singapore and Taiwan seem to be making the running in this area. It remains to be seen whether Japan and India will catch up.

As ever in this part of the world, nobody knows how China's international emergence will pan out. In another decade, it could be producing a sizeable percentage of the world's major innovations and housing a quarter of its university students. But our data suggest that caution may be needed with some of the wilder predictions. Taiwan, India, South Korea, South Africa and Mexico contain many more universities on the brink of entering the world top 200 than does China.

'The focus on stem-cell research in Korea suggests the medical research gap may soon close'

THE REST OF THE WORLD'S TOP 50 UNIVERSITIES

RANK	WORLD RANK	NAME	COUNTRY
1	15	Beijing University	China
2	16	Tokyo University	Japan
3	19	Melbourne University	Australia
4	22	Natl Univ Singapore	Singapore
5	23	Australian Natl University	Australia
6	31	Kyoto University	Japan
7	33	Monash University	Australia
8	38=	Sydney University	Australia
9	40	Univ of New South Wales	Australia
10	41	Hong Kong University	Hong Kong
11	43	Hong Kong Univ Sci & Technol	Hong Kong
12	47	Queensland University	Australia
13	48	Nanyang Technological Univ	Singapore
14	50	Indian Institutes of Technol	India
15	51	Chinese Univ Hong Kong	Hong Kong
16	52	Auckland University	New Zealand
17	62=	Tsing Hua University	China
18	67	Macquarie University	Australia
19	72	Fudan University	China
20	77=	Hebrew Univ Jerusalem	Israel
21=	80=	Adelaide University	Australia
21=	80=	Univ of Western Australia	Australia
23	82	RMIT University	Australia
24	84	Indian Insts of Management	India
25	87	Univ of Technology, Sydney	Australia
26=	93=	China Univ Sci & Technol	China
26=	93=	Seoul Natl University	South Korea
28	95=	Natl Auton Univ of Mexico	Mexico
29	98	La Trobe University	Australia
30	99	Tokyo Inst Technol	Japan
31	101=	Curtin University of Technol	Australia
32	105=	Osaka University	Japan
33	114=	Natl Taiwan University	Taiwan
34	118	Queensland Univ of Technol	Australia
35	121=	Chulalongkorn University	Thailand
36	127=	University of Newcastle	Australia
37	129	Nagoya University	Japan
38	136=	Tohoku University	Japan
39	143=	Korea Adv Inst Sci & Technol	South Korea
40	147=	Hiroshima University	Japan
41	150=	Nanjing University	China
42	154=	Univ of South Australia	Australia
43	157=	Hokkaido University	Japan
44	166=	Tasmania University	Australia
45=	169=	Shanghai Jiao Tong Univ	China
45=	169=	Malaya University	Malaysia
47	172=	Kobe University	Japan
48	178	City Univ Hong Kong	Hong Kong
49	184=	Korea University	South Korea
50	186=	Otago University	New Zealand

Brand names rule the roost

These tables show the top universities for each of the principal areas of academic life. They are based on the more detailed tables that have been published in *The Times Higher* throughout October.

It is not possible to collect detailed data on topics such as staff numbers or international students for each of the five areas we have analysed here.

Instead, we have listed the top-ranking universities as named by our expert peer reviewers. We also list the citations per paper for each institution in the respective subject areas.

The peer review data were collected by

QS Quacquarelli Symonds and the citations by Evidence Ltd, using the Thomson Scientific Essential Science Indicators data for 1995 to 2005.

Because of the ESI's very low coverage of the arts and humanities, we have not published citations data for those disciplines.

The tables suggest that in addition to being the world's best university overall, Harvard University is top in the arts and humanities, medicine and the social sciences. In the natural sciences it comes fourth and in technology a modest 21st.

These tables suggest that Harvard,

Cambridge, Berkeley, Oxford universities and other brand-name institutions are strong across the board. But they also bring out the capacity of specialist institutions such as the London School of Economics, which is second in the social sciences and ninth in the arts and humanities, and Sweden's Karolinska Institute, fourth in biomedicine.

Perhaps most striking is the broad strength of Stanford University in California, best known as the technological mainstay of Silicon Valley.

It is ranked fourth in technology, seventh in science and fifth in both biomedicine and the social sciences.

TOP 50 IN ARTS AND HUMANITIES			
RANK	NAME	COUNTRY	PEER SCORE
1	Harvard University	US	100.0
2	Oxford University	UK	84.7
3	Cambridge University	UK	81.2
4	University of California, Berkeley	US	77.8
5	Yale University	US	77.4
6	Beijing University	China	70.9
7	Princeton University	US	69.2
8	Melbourne University	Australia	60.0
9	London School of Economics	UK	58.7
10	Australian National University	Australia	56.7
11	Columbia University	US	56.5
12	Massachusetts Institute Technol	US	53.5
13	Univ Paris 1 Panthéon Sorbonne	France	52.9
14	La Sapienza University, Rome	Italy	51.6
15	McGill University	Canada	50.9
16	Tokyo University	Japan	50.5
17	University of Texas at Austin	US	50.2
18=	Copenhagen University	Denmark	47.7
18=	Kyoto University	Japan	47.7
20	Natl Autonomous Univ of Mexico	Mexico	46.9
21=	Queen Mary, University of London	UK	46.7
21=	University College London	UK	46.7
23=	La Trobe University	Australia	45.7
23=	Monash University	Australia	45.7
25=	Auckland University	New Zealand	45.4
25=	Georgetown University	US	45.4
27=	Edinburgh University	UK	44.9
27=	Tor Vergata University, Rome	Italy	44.9
29=	Helsinki University	Finland	44.7
29=	School of African & Oriental Studies	UK	44.7
29=	Oslo University	Norway	44.7
29=	University of Technology, Sydney	Australia	44.7
33	Chicago University	US	44.1
34=	University of British Columbia	Canada	43.9
34=	University of Michigan	US	43.9
36=	Hebrew University of Jerusalem	Israel	42.6
36=	Macquarie University	Australia	42.6
36=	Sydney University	Australia	42.6
39=	Calcutta University	India	42.3
39=	Sussex University	UK	42.3
41=	University of California, Los Angeles	US	41.5
41=	Heidelberg University	Germany	41.5
41=	Pennsylvania University	US	41.5
44	Brown University	US	40.9
45=	Chinese University of Hong Kong	Hong Kong	40.1
45=	Malaya University	Malaysia	40.1
45=	University of Western Australia	Australia	40.1
48=	Pontifical Catholic University of Chile	Chile	39.2
48=	Massachusetts University	US	39.2
50	Johns Hopkins University	US	38.3

TOP 50 IN SOCIAL SCIENCES				
RANK	NAME	COUNTRY	PEER SCORE	CITATIONS PER PAPER
1	Harvard University	US	100.0	9.4
2	London School of Economics	UK	96.3	4.6
3	Oxford University	UK	88.4	5.3
4	University California, Berkeley	US	85.3	6.9
5	Stanford University	US	80.4	8.5
6	Yale University	US	77.3	7.2
7	Massachusetts Institute Technol	US	73.9	8.9
8	Cambridge University	UK	73.5	4.6
9	Chicago University	US	73.0	9.9
10	Princeton University	US	68.9	8.0
11	Melbourne University	Australia	63.6	2.8
12	Columbia University	US	63.3	6.7
13	National University of Singapore	Singapore	63.1	3.0
14	Tokyo University	Japan	61.7	-
15	Australian National University	Australia	60.5	3.3
16	Cornell University	US	57.1	5.8
17=	Indian Institutes of Management	India	56.9	-
17=	Monash University	Australia	56.9	3.1
19	Sydney University	Australia	52.2	4.1
20	New York University	US	50.3	6.1
21	Erasmus University Rotterdam	Netherlands	49.2	4.6
22	University of Pennsylvania	US	48.6	7.6
23	Beijing University	China	48.4	-
24	University of New South Wales	Australia	48.1	3.7
25	Queensland University	Australia	47.2	2.7
26	University of California, Los Angeles	US	47.0	7.6
27	Catholic University of Leuven (French)	Belgium	46.7	3.5
28	Boston University	US	46.1	6.2
29=	McGill University	Canada	44.3	4.0
29=	University of Toronto	Canada	44.3	4.2
31	Manchester University & Umist	UK	43.2	4.3
32	Carnegie Mellon University	US	43.0	9.4
33	Hong Kong University	Hong Kong	41.8	2.5
34	University of Michigan	US	41.5	7.6
35	Munich University	Germany	41.3	-
36	Univ Paris 1 Panthéon Sorbonne	France	41.0	-
37	RMIT University	Australia	40.7	-
38	University College London	UK	40.1	5.6
39	Kyoto University	Japan	39.7	-
40	Northwestern University	US	39.5	8.0
41	Massachusetts University	US	39.4	4.4
42=	Vienna University	Austria	39.2	-
42=	Warwick University	UK	39.2	3.6
44=	Amsterdam University	Netherlands	38.1	3.9
44=	Bonn University	Germany	38.1	-
46=	Chinese University of Hong Kong	Hong Kong	37.4	3.4
46=	Chulalongkorn University	Thailand	37.4	-
46=	Macquarie University	Australia	37.4	-
49	University of British Columbia	Canada	37.2	5.0
50	Copenhagen University	Denmark	37.1	-