



# 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=      | -         | São 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

**T**oday *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*.

He would like to thank **Nunzio Quacquarelli** of QS (www.qsnetwork.com), **Jonathan Adams** of Evidence Ltd (www.evidence.co.uk) and their colleagues for their participation in this project.

# Worldly Europe seeks critical mass for greater impact

Many European institutions fare well against transatlantic rivals, and a pan-EU research council could make them more competitive, argues **Martin Ince**

**A**re Europe's universities better than North America's? The tables displayed here and on page 11 showing the top 50 institutions in Europe and North America give one reason for thinking they might be. The 50th ranked European university in our analysis, La Sapienza in Rome, is 125th in the world, according to our full World University Rankings. But the 50th position in our North American table is a tie between Georgetown University in the US and the University of Waterloo in Canada, which share 159th world position.

The contrast is even sharper if Canada is omitted from the calculations. The 50th US institution, Notre Dame University, is 179th in the world, behind New Zealand's Otago University, which is 50th in our Rest



of the World ranking and 186th overall.

This analysis suggests that it would be wrong to conclude from the World University Rankings that the US has all the excellent institutions. Based on our criteria, Harvard



**Cambridge: the cream of Europe**

University is by some distance the best in the world, and it is one of seven US universities in our top ten. But lower down, European institutions assert themselves in more significant numbers.

These statistical differences may reveal something more fundamental about educational cultures in the two regions. In the 2004 World University Rankings, Heidelberg University was the top German university at position 47, one of 17 German institutions in the top 200. The German response was to assert that the main role of universities was to produce trained professionals in large numbers for an advanced economy and that many competent universities were to be preferred to a few elite establishments. This year, Heidelberg rises two places to 45th, but Germany has only



HEIDELBERG

More than 600 years of innovation and independence have made the University of Heidelberg Germany's top university.

It was founded in 1386 by Ruprecht I and acted initially as a centre for theologians and law experts from throughout the Holy Roman Empire.

It became a hub for independent thinkers and developed into a stronghold of humanism. Its refusal to submit to a set doctrine from the Catholic or Evangelical churches, and its ability to balance

religion and science, ensured a lasting reputation as a haven for open-mindedness.

"International students account for about 22 per cent of our student body," says Angelos Chaniotis, pro-rector for international affairs. The university currently has 26,000 students and about 400 professors.

Heidelberg's modern roots are firmly in the sciences but it retains its metaphysical traditions with large theology and philosophy faculties.

Professor Chaniotis said: "We have some of the best science institutes in Europe on our doorstep, which makes us very much research oriented."

**Clare Chapman**

apparent from this analysis — their comparatively low production of highly cited research. At the moment, the US takes the top eight places in our count of paper citations per staff member, with Sweden's Gothenburg University the highest placed European entrant at ninth position.

The incentive to produce more highly cited papers will also grow once the European Research Council gets going over the next two years. It has been designed as a counterweight to the National Science Foundation in the

**'Most European universities are far more international than their American or Asian counterparts'**

US and is intended to increase the amount of high-impact cutting-edge research in Europe by making researchers compete for funding across the EU. This may sound fine to planners in Brussels, but it is possible that the ERC's policy of concentrating major sums of money

in a few big projects will conflict with the preferred way of working in many continental universities. The low citations performance of many European institutions is more than compensated for by another measure that might well please Brussels policymakers. Most European universities are far more international than their American or Asian counterparts. While the City University of Hong Kong has the most international staff of any in the world, the next three places based on this criterion go to European institutions. European universities take 11 of the top 20 places on this measure. This is a competition where Switzerland is clear world leader, taking six of the first 20 slots.

The same applies to students, where years of attempts to enhance European student mobility appear to be bearing fruit. Here Europe takes the top four positions: the LSE is the outright winner, with 62 per cent of its undergraduates and postgraduates coming from outside the UK. The School of Oriental and African Studies, also in London, is second. European institutions take 13 of the top 20 places in this reckoning. Their only rivals are in Australia and Singapore. The most international student body of any US university is that of the Massachusetts Institute of Technology, which is ranked 27th.

On our new criterion of recruiter opinion, European universities cannot shift Harvard from the top slot. But there are nine European entries in the top 20, including — in a rare entry for a Spanish institution — Esade, a specialist humanities and business university.

nine universities in our top 200, making it the biggest loser among major entrants.

European states have in the main ceded little ground on education to Brussels. But there are signs that European higher education systems are converging in a way that will affect the region's rankings in years to come. The first factor is general pressure from Brussels for more research spending by companies and governments. While the official plan for the European Union to devote 3 per cent of its gross domestic product to research by 2010 is certain to be missed, research budgets in major EU nations, including the UK, are on the rise. It is also likely that the European Commission's own research spending will rise in future years.

This suggests that European universities may begin to redress one area of weakness

EUROPE'S TOP 50 UNIVERSITIES

| RANK | WORLD RANK | UNIVERSITY NAME                   | COUNTRY     |
|------|------------|-----------------------------------|-------------|
| 1    | 3          | Cambridge University              | UK          |
| 2    | 4          | Oxford University                 | UK          |
| 3    | 10         | Ecole Polytechnique               | France      |
| 4    | 11=        | London School of Economics        | UK          |
| 5    | 13         | Imperial College London           | UK          |
| 6    | 21         | ETH Zurich                        | Switzerland |
| 7    | 24=        | Ecole Normale Supérieure, Paris   | France      |
| 8    | 28         | University College London         | UK          |
| 9    | 30         | Edinburgh University              | UK          |
| 10   | 34         | Ecole Polytech Féd Lausanne       | Switzerland |
| 11   | 35         | Manchester University & Umist     | UK          |
| 12   | 45         | Heidelberg University             | Germany     |
| 13   | 49         | Bristol University                | UK          |
| 14   | 53         | Delft University of Technology    | Netherlands |
| 15   | 55         | Munich University                 | Germany     |
| 16   | 57         | Erasmus University Rotterdam      | Netherlands |
| 17   | 58=        | Amsterdam University              | Netherlands |
| 18   | 62=        | Helsinki University               | Finland     |
| 19   | 65         | Vienna University                 | Austria     |
| 20   | 66         | Copenhagen University             | Denmark     |
| 21   | 69         | IEP Sciences Po, Paris            | France      |
| 22   | 70         | Eindhoven University of Technol   | Netherlands |
| 23   | 73=        | King's College London             | UK          |
| 24   | 76         | Brussels Free University (French) | Belgium     |
| 25   | 77=        | Warwick University                | UK          |
| 26   | 79         | Lomonosov Moscow State Univ       | Russia      |
| 27   | 83         | Durham University                 | UK          |
| 28   | 85         | Zurich University                 | Switzerland |
| 29   | 86         | Vienna Technical University       | Austria     |
| 30=  | 88=        | Catholic Univ Leuven (French)     | Belgium     |
| 30=  | 88=        | Geneva University                 | Switzerland |
| 30=  | 88=        | Pierre and Marie Curie University | France      |
| 33   | 92         | Ecole Normale Supérieure, Lyon    | France      |
| 34   | 95=        | Catholic Univ Leuven (Flemish)    | Belgium     |
| 35   | 97         | Nottingham University             | UK          |
| 36   | 100        | Sussex University                 | UK          |
| 37   | 101=       | Glasgow University                | UK          |
| 38=  | 103=       | Leeds University                  | UK          |
| 38=  | 103=       | Soas                              | UK          |
| 40   | 105=       | Technical University Munich       | Germany     |
| 41   | 108        | Wageningen University             | Netherlands |
| 42   | 109=       | York University                   | UK          |
| 43   | 111        | Trinity College, Dublin           | Ireland     |
| 44=  | 112=       | Humboldt University Berlin        | Germany     |
| 44=  | 112=       | Queen Mary, Univ of London        | UK          |
| 46   | 114=       | Göttingen University              | Germany     |
| 47   | 119        | Liverpool University              | UK          |
| 48   | 120        | Utrecht University                | Netherlands |
| 49   | 121=       | Univ Paris 1 Panthéon Sorbonne    | France      |
| 50   | 125=       | La Sapienza Univ, Rome            | Italy       |

# Giants of the US face contenders from all corners

The ability of institutions in Europe and Asia to attract and fund world-class research teams is cutting into America's monopoly on innovation in areas such as bioscience, discovers **Martin Ince**

**N**orth America's dominance of world higher education is disputed in the lower reaches of our tables, but it is beyond question at the upper level. The US has the world's top two universities by our reckoning — Harvard and the Massachusetts Institute of Technology, neighbours on the Charles River — and seven of the places in our top ten. Only the UK's Cambridge and Oxford universities and France's Ecole Polytechnique interrupt US domination of these top places.

Of course, there is more to North America than the US. In the top 50 are six Canadian institutions, twice as many as last year. McGill University, the most highly ranked, is 24th in the world, down from 21st in 2004. Up eight places each this year are the University of Toronto at 29 and the University of British



CORBIS

## STANFORD

Stanford University may be 250 years younger than its arch-rival, Harvard University, but it prefers to look

forward rather than back.

It is one of the world's leading research and teaching institutions and a pioneer of new technologies.

"There is no greater thrill than advancing the frontier of

knowledge," said John Hennessy, the university's president.

Stanford, which emphasises collaboration across disciplines, has introduced multidisciplinary programmes in bioscience, international

affairs and business.

In 1951, the university created America's first high-technology research park, and it has spun off an estimated 1,200 companies. These include Cisco Systems, Dolby Laboratories,

eBay, Hewlett-Packard, Google, Sun Microsystems and Yahoo! — all companies that Stanford students and faculty helped to create.

Its researchers invented the laser, the musical synthesiser, global positioning

systems and IQ testing. They carried out the first heart-lung transplants in the US, discovered REM sleep and developed the technology that led to magnetic resonance imaging scans.

**Jon Marcus**

Columbia at 38. Canada has eight of the top 200 world slots, one more than last year.

The promotion of Cambridge and Oxford to third and fourth positions in the World University Rankings and the improved performance of MIT have meant a decline in the relative standing of Berkeley, the University of California's most prestigious campus, set up in the 19th century as the West Coast's answer to Harvard.

This table shows that quality US universities exist in many settings. Some, such as Harvard and MIT, are independent and gain the bulk of their income from student fees, research awards and fundraising. Institutions with this structure take 13 of the top 15 places.

The other US universities operating at this level are both part of the University of California, which is unique in being the higher level of two state universities alongside California State University. The success of this formula is evident in that five of its campuses appear in this North American top 50. Lower down, more orthodox state universities appear in numbers. These institutions are systematically less well funded than their private rivals because they have fewer high-profile research groups and charge lower fees than the big-name private universities.

But this table does not exhibit the strength of another key group of US universities, the elite teaching-only colleges. These charge fees similar to those at better known private universities and tend to have a similarly elite student body. Despite the name, most have some research-active staff. But they tend not to produce many cited papers or to have much of an international profile compared with universities undertaking more significant research. By contrast, Berkeley's high research profile means that it appears more prominently in these tables than in US national tables (such as those published by *US News & World Report*) designed to help students choose universities. For the same reason, Harvard is prominent in such US tables but dominates them less than it does the World University Rankings.

At a time when confidence is returning to the US high-technology sector, these tables are rich in universities that nourished the IT revolution and are now getting involved in the next wave of technological advance in areas such as robotics and nanotechnology. Names prominent in these developments include MIT, Stanford

University, the California Institute of Technology, the University of Texas and Carnegie Mellon University, along with campuses of the University of California. Many have sizeable war chests for this phase of expansion, not least because of donations from grateful alumni who profited from previous waves of high technology.

**'These rankings show that big-name institutions will find it much tougher to keep control of the next major phase of innovation'**

The big-name institutions monopolised the development of the microprocessor and all that came in its wake; but these rankings show that they will find it much tougher to keep control of the next phase of innovation.

The reluctance of the US Government to support research in areas close to human life, such as the use of stem cells, is only part of the picture. Ingenious US researchers are already finding ways around the Bush Administration's policies. A more serious threat is the growing ability of universities such as Cambridge and Oxford in the UK — and a number of Asian institutions in Korea, Singapore and elsewhere — to attract significant research groups in these areas and fund them at least as well as the US.

Over the next decade, the same may start to happen in China and a greater number of continental universities may adopt similar tactics. US universities may have produced the innovations needed to foster globalisation, but it does not follow that they will be the ones to benefit.



Pre-eminent: Harvard University is still tops

## NORTH AMERICA'S TOP 50 UNIVERSITIES

| RANK | WORLD RANK | NAME                          | COUNTRY |
|------|------------|-------------------------------|---------|
| 1    | 1          | Harvard University            | US      |
| 2    | 2          | Massachusetts Inst Technol    | US      |
| 3    | 5          | Stanford University           | US      |
| 4    | 6          | UC, Berkeley                  | US      |
| 5    | 7          | Yale University               | US      |
| 6    | 8          | California Inst of Technology | US      |
| 7    | 9          | Princeton University          | US      |
| 8    | 11=        | Duke University               | US      |
| 9    | 14         | Cornell University            | US      |
| 10=  | 17=        | UC, San Francisco             | US      |
| 10=  | 17=        | University of Chicago         | US      |
| 12   | 20         | Columbia University           | US      |
| 13   | 24=        | McGill University             | Canada  |
| 14   | 26         | University of Texas at Austin | US      |
| 15   | 27         | Johns Hopkins University      | US      |
| 16   | 29         | University of Toronto         | Canada  |
| 17   | 32         | Pennsylvania University       | US      |
| 18   | 36         | University of Michigan        | US      |
| 19   | 37         | UC, Los Angeles               | US      |
| 20   | 38=        | Univ of British Columbia      | Canada  |
| 21   | 42         | UC, San Diego                 | US      |
| 22   | 44         | Carnegie Mellon University    | US      |
| 23   | 46         | Northwestern University       | US      |
| 24   | 54         | Boston University             | US      |
| 25   | 56         | New York University           | US      |
| 26=  | 58=        | University of Illinois        | US      |
| 26=  | 58=        | Washington Univ, St Louis     | US      |
| 28   | 61         | Purdue University             | US      |
| 29   | 64         | Pennsylvania State Univ       | US      |
| 30   | 68         | Massachusetts University      | US      |
| 31   | 71         | Brown University              | US      |
| 32=  | 73=        | Rochester University          | US      |
| 32=  | 73=        | Univ of Wisconsin-Madison     | US      |
| 34   | 88=        | Washington University         | US      |
| 35   | 105=       | Virginia University           | US      |
| 36   | 109=       | Case Western Reserve Univ     | US      |
| 37   | 114=       | Vanderbilt University         | US      |
| 38   | 117        | Dartmouth College             | US      |
| 39   | 121=       | Michigan State University     | US      |
| 40   | 124        | Univ of Southern California   | US      |
| 41   | 125=       | Texas A&M University          | US      |
| 42   | 132        | Université de Montréal        | Canada  |
| 43   | 133=       | Maryland University           | US      |
| 44   | 141        | Emory University              | US      |
| 45   | 143=       | North Carolina University     | US      |
| 46   | 147=       | Georgia Inst of Technology    | US      |
| 47   | 149        | University of Alberta         | Canada  |
| 48=  | 150=       | University of Minnesota       | US      |
| 48=  | 150=       | Rice University               | US      |
| 50=  | 159=       | UC, Santa Barbara             | US      |
| 50=  | 159=       | Georgetown University         | US      |
| 50=  | 159=       | University of Waterloo        | Canada  |

# 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

**T**here 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



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 |

## TOP 50 IN SCIENCE

| RANK | NAME                                    | COUNTRY     | PEER SCORE | CITATIONS PER PAPER | RANK | NAME                                | COUNTRY     | PEER SCORE | CITATIONS PER PAPER |
|------|---|-------------|------------|---------------------|------|-------------------------------------|-------------|------------|---------------------|
| 1    | Cambridge University                    | UK          | 100        | 12.9                | 25=  | University of Texas at Austin       | US          | 46.8       | 11.4                |
| 2    | Oxford University                       | UK          | 94.6       | 12.2                | 27   | La Sapienza University, Rome        | Italy       | 46.7       | 7.8                 |
| 3    | University of California, Berkeley      | US          | 92.7       | 16.0                | 28   | Utrecht University                  | Netherlands | 46.3       | 10.5                |
| 4    | Harvard University                      | US          | 89.9       | 20.6                | 29=  | Munich University                   | Germany     | 45.9       | 9.3                 |
| 5    | Massachusetts Institute Technol         | US          | 87.3       | 16.6                | 29=  | University of Illinois              | US          | 45.9       | 11.2                |
| 6    | Princeton University                    | US          | 80.4       | 17.7                | 31   | Columbia University                 | US          | 45.8       | 15.8                |
| 7    | Stanford University                     | US          | 79.1       | 17.3                | 32   | Melbourne University                | Australia   | 45         | 8.5                 |
| 8    | Tokyo University                        | Japan       | 74.5       | 9.2                 | 33   | Göttingen University                | Germany     | 44.7       | 8.6                 |
| 9    | California Institute of Technology      | US          | 72.4       | 18.0                | 34   | National University of Singapore    | Singapore   | 44.2       | 5.2                 |
| 10   | Imperial College London                 | UK          | 69.5       | 10.7                | 35   | Université Paris-Sud 11             | France      | 43.3       | 9.9                 |
| 11   | Cornell University                      | US          | 64.3       | 12.5                | 36   | Indian Institutes of Technology     | India       | 43.2       | -                   |
| 12   | ETH Zurich                              | Switzerland | 63.1       | 14.0                | 37   | Sydney University                   | Australia   | 41         | 7.8                 |
| 13   | Australian National University          | Australia   | 61.9       | 11.7                | 38   | Edinburgh University                | UK          | 40.8       | 12.5                |
| 14   | Beijing University                      | China       | 60.8       | -                   | 39   | Monash University                   | Australia   | 40         | -                   |
| 15   | Yale University                         | US          | 60.1       | 16.9                | 40   | University of New South Wales       | Australia   | 39.7       | 8.0                 |
| 16   | Kyoto University                        | Japan       | 58.5       | 7.8                 | 41   | University of Michigan              | US          | 39.3       | 12.6                |
| 17   | University of Chicago                   | US          | 58.3       | 16.3                | 42   | Johns Hopkins University            | US          | 39         | 15.5                |
| 18   | Ecole Normale Supérieure, Paris         | France      | 57         | -                   | 43   | University of British Columbia      | Canada      | 38.7       | 10.1                |
| 19   | Ecole Polytechnique                     | France      | 54.5       | -                   | 44   | McGill University                   | Canada      | 38.4       | 9.8                 |
| 20   | Pierre and Marie Curie University       | France      | 54.2       | 8.6                 | 45=  | China University of Sci & Technol   | China       | 38.3       | -                   |
| 21   | Lomonosov Moscow State Univ             | Russia      | 51.1       | -                   | 45=  | Seoul National University           | South Korea | 38.3       | -                   |
| 22   | Heidelberg University                   | Germany     | 50.6       | 11.6                | 47   | Aarhus University                   | Denmark     | 36.8       | -                   |
| 23   | University of California, Los Angeles   | US          | 49.3       | 13.9                | 48   | University of California, San Diego | US          | 36.7       | 15.3                |
| 24   | University of Toronto                   | Canada      | 49         | 11.0                | 49   | Copenhagen University               | Denmark     | 36.5       | 8.7                 |
| 25=  | University of California, Santa Barbara | US          | 46.8       | 17.6                | 50   | Tokyo Institute of Technology       | Japan       | 36.4       | -                   |

## TOP 50 IN TECHNOLOGY

| RANK | NAME                                   | COUNTRY     | PEER SCORE | CITATIONS PER PAPER |
|------|--|-------------|------------|---------------------|
| 1    | Massachusetts Institute Technol        | US          | 100.0      | 6.0                 |
| 2    | University of California, Berkeley     | US          | 98.7       | 6.3                 |
| 3    | Indian Institutes of Technology        | India       | 86.4       | -                   |
| 4    | Stanford University                    | US          | 84.9       | 6.8                 |
| 5    | Imperial College London                | UK          | 81.3       | 4.1                 |
| 6    | Cambridge University                   | UK          | 79.4       | 5.1                 |
| 7    | California Institute of Technology     | US          | 78.0       | 7.1                 |
| 8    | Tokyo University                       | Japan       | 76.8       | -                   |
| 9    | National University of Singapore       | Singapore   | 74.1       | -                   |
| 10   | Beijing University                     | China       | 68.5       | -                   |
| 11   | Tokyo Institute of Technology          | Japan       | 67.2       | -                   |
| 12   | ETH Zurich                             | Switzerland | 67.1       | 6.6                 |
| 13   | Oxford University                      | UK          | 66.0       | 5.7                 |
| 14   | Carnegie Mellon University             | US          | 65.8       | 4.9                 |
| 15   | Delft University of Technology         | Netherlands | 65.6       | -                   |
| 16   | University of New South Wales          | Australia   | 60.4       | -                   |
| 17   | Tsing Hua University                   | China       | 60.1       | -                   |
| 18   | Melbourne University                   | Australia   | 59.9       | 4.5                 |
| 19   | Kyoto University                       | Japan       | 59.5       | -                   |
| 20   | Georgia Institute of Technology        | US          | 58.7       | 3.8                 |
| 21   | Harvard University                     | US          | 58.3       | 7.6                 |
| 22   | Ecole Polytechnique                    | France      | 58.1       | 4.2                 |
| 23   | Hong Kong Univ of Sci & Technol        | Hong Kong   | 57.6       | 3.2                 |
| 24   | Monash University                      | Australia   | 57.0       | -                   |
| 25   | Technion - Israel Institute Technol    | Israel      | 56.4       | -                   |
| 26   | Nanyang Technological University       | Singapore   | 56.2       | -                   |
| 27   | University of Illinois                 | US          | 54.0       | 4.9                 |
| 28   | Aachen RWTH                            | Germany     | 53.6       | 3.1                 |
| 29   | Australian National University         | Australia   | 53.5       | -                   |
| 30   | University of Texas at Austin          | US          | 53.4       | 4.0                 |
| 31   | University of Toronto                  | Canada      | 52.4       | 4.1                 |
| 32   | Vienna University of Technology        | Austria     | 52.1       | 3.1                 |
| 33   | Technical University Munich            | Germany     | 51.9       | 3.7                 |
| 34   | Cornell University                     | US          | 51.5       | 6.0                 |
| 35   | Purdue University                      | US          | 51.2       | 4.2                 |
| 36=  | University of California, Los Angeles  | US          | 50.6       | 5.5                 |
| 36=  | Ecole Polytech Féd de Lausanne         | Switzerland | 50.6       | 5.2                 |
| 38   | Princeton University                   | US          | 49.8       | 7.0                 |
| 39   | Catholic University of Leuven (French) | Belgium     | 49.6       | 4.2                 |
| 40   | Queensland University                  | Australia   | 48.3       | 3.2                 |
| 41   | Manchester University & Umist          | UK          | 47.2       | 3.6                 |
| 42=  | Korea Adv Inst Science & Technol       | South Korea | 46.5       | -                   |
| 42=  | McGill University                      | Canada      | 46.5       | 4.1                 |
| 44=  | Massachusetts University               | US          | 46.2       | 4.7                 |
| 44=  | Lomonosov Moscow State Univ            | Russia      | 46.2       | -                   |
| 44=  | Technical University Berlin            | Germany     | 46.2       | -                   |
| 47   | University of British Columbia         | Canada      | 45.7       | -                   |
| 48   | Sydney University                      | Australia   | 45.1       | 4.1                 |
| 49   | Auckland University                    | New Zealand | 44.7       | -                   |
| 50   | China University Science & Technol     | China       | 44.4       | -                   |

## TOP 50 IN BIOMEDICINE

| RANK | NAME                                    | COUNTRY     | PEER SCORE | CITATIONS PER PAPER |
|------|---|-------------|------------|---------------------|
| 1    | Harvard University                      | US          | 100.0      | 28.5                |
| 2    | Cambridge University                    | UK          | 95.8       | 23.0                |
| 3    | Oxford University                       | UK          | 84.3       | 23.0                |
| 4    | Karolinska University                   | Sweden      | 83.8       | 16.3                |
| 5    | Stanford University                     | US          | 81.0       | 27.2                |
| 6    | Imperial College London                 | UK          | 80.9       | 14.2                |
| 7    | Johns Hopkins University                | US          | 77.7       | 23.6                |
| 8    | Beijing University                      | China       | 69.5       | -                   |
| 9    | University of California, Berkeley      | US          | 69.2       | 26.5                |
| 10   | Melbourne University                    | Australia   | 67.7       | 12.0                |
| 11   | Yale University                         | US          | 63.9       | 24.7                |
| 12   | Tokyo University                        | Japan       | 61.5       | 16.0                |
| 13   | Massachusetts Institute Technol         | US          | 60.6       | 40.9                |
| 14   | University of California, San Diego     | US          | 59.1       | 25.9                |
| 15   | National University Singapore           | Singapore   | 58.5       | -                   |
| 16   | Edinburgh University                    | UK          | 57.5       | 17.9                |
| 17   | Heidelberg University                   | Germany     | 56.0       | 14.1                |
| 18   | Sydney University                       | Australia   | 55.1       | -                   |
| 19   | University of California, San Francisco | US          | 54.9       | 25.5                |
| 20   | University of Toronto                   | Canada      | 54.4       | 17.0                |
| 21   | Australian National University          | Australia   | 53.4       | -                   |
| 22   | University College London               | UK          | 53.2       | 18.6                |
| 23   | Duke University                         | US          | 52.1       | 21.8                |
| 24   | McGill University                       | Canada      | 51.7       | 18.9                |
| 25   | Columbia University                     | US          | 50.6       | 22.2                |
| 26   | Cornell University                      | US          | 50.5       | 20.8                |
| 27   | Kyoto University                        | Japan       | 50.1       | 16.7                |
| 28   | Monash University                       | Australia   | 48.8       | 12.1                |
| 29=  | King's College London                   | UK          | 45.0       | 13.6                |
| 29=  | Queensland University                   | Australia   | 45.0       | -                   |
| 31   | University of British Columbia          | Canada      | 44.6       | 15.9                |
| 32   | University of California, Los Angeles   | US          | 44.2       | 19.4                |
| 33   | Auckland University                     | New Zealand | 43.9       | -                   |
| 34   | York University                         | UK          | 43.6       | -                   |
| 35   | Fudan University                        | China       | 43.0       | -                   |
| 36   | Princeton University                    | US          | 42.7       | -                   |
| 37   | Hong Kong University                    | Hong Kong   | 42.1       | -                   |
| 38   | California Institute of Technology      | US          | 41.5       | -                   |
| 39   | Helsinki University                     | Finland     | 40.8       | 15.7                |
| 40   | Vienna University                       | Austria     | 40.5       | -                   |
| 41   | University of New South Wales           | Australia   | 40.4       | -                   |
| 42   | Baylor College of Medicine              | US          | 39.6       | 21.8                |
| 43   | Boston University                       | US          | 38.7       | 18.8                |
| 44   | Munich University                       | Germany     | 37.8       | 13.2                |
| 45   | University of Michigan                  | US          | 37.7       | 19.5                |
| 46   | Humboldt University Berlin              | Germany     | 37.5       | 12.4                |
| 47   | Queensland University Technol           | Australia   | 37.2       | -                   |
| 48=  | Washington University                   | US          | 36.5       | 21.8                |
| 48=  | Chinese University of Hong Kong         | Hong Kong   | 36.5       | -                   |
| 50=  | Otago University                        | New Zealand | 36.2       | -                   |
| 50=  | Hong Kong Univ Sci & Technol            | Hong Kong   | 36.2       | -                   |

# 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       | -                   |

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