

THE TIMES  
**HIGHER**  
EDUCATION SUPPLEMENT



# WORLD UNIVERSITY RANKINGS

NOVEMBER 9 2007



# Ideas without borders as excellence goes global

**The very top institutions may all be in the English-speaking world, but the top 200 are spread across 28 nations. Martin Ince reports**

This fourth edition of *The Times Higher-QS World University Rankings* confirms the message of earlier editions: the top universities, on a number of measures, are in the English-speaking world. Although heavily dependent on state funding, they are independent of governments. And, in many cases, they are far from being ivory towers. Instead, they are active in generating new technology and ideas across a wide range of subject areas and are closely integrated into the economies and societies of which they form part.

Their success at generating new knowledge and producing highly employable graduates — in the US especially — has made them rich from alumni donations, research grants and spin-off companies. Harvard University, which this year is top for the fourth time, is the world's richest by some distance, outspending the research budgets of many countries.

These rankings show the US and the UK to be home to the top universities on a wide range of measures, reflecting their success as well as the esteem in which they are held worldwide by academics and employers. Canada, Australia, Japan and Hong Kong are the only other countries to appear in the top 20, while the top Continental European institution, the Ecole Normale Supérieure, is in 26th place.

But the rankings also contain

a more subversive message. The top 200 universities are in 28 countries. Four are in the developing world: in Brazil (with two entrants), Mexico and South Africa, where the University of Cape Town finally enters the top 200 after three years of near misses. Many small but affluent countries, for example Switzerland and the Scandinavian nations, have at least one entry. The story is less favourable in Mediterranean Europe. Italy and Spain muster only three universities between them in this analysis. But the overall message is that if a consistent approach to measuring academic excellence, combining academic and employer opinion with numerical data, is applied across the world, high quality can be found on every continent.

As in previous years, these rankings, whose methodology is explained more fully on page 7, rely on a comparatively small number of simple measures because of the need to gather comparable data from institutions from China to Ireland. The top few are excellent on all the criteria we use, including those that reflect research excellence, teaching quality, graduate employability and attractiveness to students.

The tables that make up these rankings differ in two important respects from the first three editions. One is that they use a

new and larger database to generate citations information. The other is that the data has for the first time been processed to eliminate single outliers having a disproportionate effect on the overall result. In the past, we have allotted a top score for each measure to the highest ranked university on that criterion, and expressed all the other scores for that measure as a percentage of the figure for the highest placed institution. This meant that one exceptional university could depress the scores for 199 others. This change has had a particularly chastening effect on the London School of Economics, which has fallen from 17th place in 2006 to 59th this year.

In addition, we have strengthened our safeguards against individuals voting for their own university in the peer review part of the analysis.

These changes have had a number of effects. The adjustments in our statistical methods means substantial change in the results between 2006 and 2007, but they will also bring more stability in future years. By contrast, Harvard in pole position was the only university whose placement did not change between our 2005 and 2006 rankings.

The larger database of citations that we use this year for the first time has the effect of giving an advantage to some East Asian universities, for example Seoul National in South Korea, up to 51 from 63 last year, and Tokyo Institute of Technology, up to 90 from 118.

But we suspect that some Malaysian and Singaporean institutions have lost out because of our increased rigour over voting for one's own university, and there are no Malaysian universities in this top 200. The

two Singaporean universities we list, the National University of Singapore and Nanyang Technological University, have each taken a fall this year. The former is down from 19th last year to 33rd, while Nanyang has gone from 61st to 69th, but there is no doubt that they are both world-class universities in a country that is serious about becoming a world centre for science and technology.

We know these tables are used in many ways by a variety of audiences — from internationally mobile staff and students to university managers wanting a look at the international esteem in which their own and other universities are held, especially in Asia where interest in the rankings is at its highest.

A wider debate is what success in these rankings tells us about specific countries and regions. While the UK has 32 universities in the top 200, starting with Oxford, Cambridge and Imperial College London in second equal and fifth positions, Germany has only 11, starting with Heidelberg University in 60th position. This result will give more impetus to the German Government's decision to put more research money into universities.

In a head-to-head contest between Europe and North America, Europe's 86 listed universities easily defeat 57 in the US or even 71 for the whole of the Americas.

But a more interesting comparison may be with the Asia-Pacific region. This area musters only 41 entries in this year's rankings. Australia's important role in the English-speaking world and the energetic marketing of its universities across the Pacific give it 12 spots, with 11 for Japan, the world's



**“In a head-to-head contest between Europe and North America, Europe’s 86 universities defeat 57 in the US, or even 71 for the whole of the Americas”**

second-biggest economy.

But perhaps this is a rare case where quality in university rankings counts for more than quantity. Many Asian universities have higher scores in 2007 than previously. Their governments may regard this as more important than the number of appearances for their own country. The Asia-Pacific region now has five of the world’s top 30 universities, two fewer than the UK but four more than France. Some of the improvement may be due to their enhanced citations performance. But it is also very possible that these and other Asia-Pacific institutions will become yet more visible in the rankings in future years. We know that in East Asia especially, governments look at these rankings with acute interest as a measure of their national standing in the world information economy.

In the decade since the 1997 financial crisis rocked the emerging Asian economies the countries of the region have increased their state and corporate spending on higher education apace, and it will take some time for the benefits to become apparent in rankings such as these. In particular, the assumption that non-English-speaking Asia is somewhere that students come from rather than go to will not hold up indefinitely. Mobile Chinese students who would once have regarded the US or Europe as the destination of choice are now looking at universities in nearby countries.

Despite the presence of South African, Brazilian and Mexican institutions in this table, the overall message of these rankings is that the sort of universities we list here, mainly large, general institutions, with a mingling of technology specialists, are a

dauntingly expensive prospect for any country, let alone one in the developing world.

There is no reason to suppose that brainpower is not distributed uniformly around the world. But it is only one of the inputs to academic excellence. It is hard to imagine a world-class university in a country that lacks a significant tax base. Even in the US and the UK, whose universities are freestanding bodies that are proud of their independent status, governments put billions of dollars and pounds into higher education and privilege it with tax breaks.

But in the modern era, even taxpayers’ money will not buy a world-class university system. The US state universities, funded mainly by state taxes and comparatively modest student fees, are not well-represented in this ranking or in national tables of US universities. With the anomalous exception of the University of California, most have fallen behind private institutions in both teaching and research. They do a competent job within the US, but have little visibility around the world.

The US and UK domination of these rankings suggests that national academic success has a number of common ingredients. The English language is a helpful start. But equally vital is the ability to connect to an economy that rewards new knowledge, for example via patents. Across the

rich world, too, universities have benefited from the growing expectation that all young people with appropriate talent will go to college. This has allowed them to grow even when, as in the UK, they are not free to charge home students fees on the scale that major US universities take for granted.

The inability of Russian institutions to figure in this year’s rankings may have much to do with Moscow’s inability to put adequate funds into its higher education system. The Indian Institutes of Technology have also fallen out of the rankings this year for the first time, partly because we are now seeking opinion on each individual IIT, not on the IIT system as a whole. However, Indian institutions including the IITs, along with Russian universities, are present in our analysis of the world’s top institutions in academic areas such as technology and the sciences (pages 8-9, 10-11).

The methodology we use is designed mainly to capture excellence in multipurpose universities in the rich world. We are seeking better ways to measure higher education in developing world countries, and for ways of comparing the achievements of specialist and postgraduate institutions with those of full-spectrum universities. We welcome your input to our thinking on the future of these rankings. ★

## ACKNOWLEDGEMENTS

*The Times Higher-QS World University Rankings* are edited by Martin Ince, contributing editor of *The Times Higher*.

He welcomes response at [Martin@martinince.com](mailto:Martin@martinince.com).

He wishes to thank Nunzio Quacquarelli and especially Ben Sowter, both of QS Quacquarelli Symonds,

for their role in compiling the rankings, and in addition to the staff of Scopus, the providers of the citations data used in the rankings.

# THE WORLD'S TOP 200 UNIVERSITIES

|     |      |  | Country     | Peer review score | Employer review score | Staff/student score | Citations/staff score | International staff score | International students score | Overall score |
|-----|------|--|-------------|-------------------|-----------------------|---------------------|-----------------------|---------------------------|------------------------------|---------------|
| 1   | 1    | Harvard University                           | US          | 100               | 100                   | 100                 | 96                    | 93                        | 91                           | 100.0         |
| 2=  | 2    | University of Cambridge                      | UK          | 100               | 100                   | 99                  | 83                    | 98                        | 91                           | 97.6          |
| 2=  | 3    | University of Oxford                         | UK          | 100               | 100                   | 100                 | 82                    | 97                        | 96                           | 97.6          |
| 2=  | 4=   | Yale University                              | US          | 100               | 98                    | 100                 | 91                    | 84                        | 75                           | 97.6          |
| 5   | 9    | Imperial College London                      | UK          | 99                | 99                    | 100                 | 81                    | 98                        | 100                          | 97.5          |
| 6   | 10   | Princeton University                         | US          | 100               | 94                    | 95                  | 97                    | 83                        | 75                           | 97.2          |
| 7=  | 7    | California Institute of Technology           | US          | 100               | 55                    | 100                 | 100                   | 100                       | 91                           | 96.5          |
| 7=  | 11   | University of Chicago                        | US          | 100               | 97                    | 100                 | 86                    | 71                        | 90                           | 96.5          |
| 9   | 25   | University College London                    | UK          | 96                | 97                    | 100                 | 82                    | 91                        | 98                           | 95.3          |
| 10  | 4=   | Massachusetts Institute of Technology        | US          | 100               | 99                    | 85                  | 98                    | 34                        | 94                           | 94.6          |
| 11  | 12   | Columbia University                          | US          | 100               | 96                    | 94                  | 91                    | 34                        | 89                           | 94.5          |
| 12  | 21   | McGill University                            | Canada      | 100               | 97                    | 99                  | 72                    | 73                        | 96                           | 93.9          |
| 13  | 13   | Duke University                              | US          | 98                | 97                    | 100                 | 92                    | 16                        | 74                           | 93.4          |
| 14  | 26   | University of Pennsylvania                   | US          | 97                | 96                    | 88                  | 92                    | 83                        | 65                           | 93.3          |
| 15  | 23   | Johns Hopkins University                     | US          | 99                | 77                    | 98                  | 96                    | 35                        | 69                           | 92.9          |
| 16  | 16   | Australian National University               | Australia   | 100               | 91                    | 100                 | 66                    | 68                        | 91                           | 91.6          |
| 17  | 19=  | University of Tokyo                          | Japan       | 100               | 92                    | 96                  | 88                    | 25                        | 44                           | 91.1          |
| 18  | 33=  | University of Hong Kong                      | Hong Kong   | 95                | 90                    | 85                  | 79                    | 100                       | 89                           | 90.7          |
| 19  | 6    | Stanford University                          | US          | 100               | 99                    | 66                  | 100                   | 25                        | 94                           | 90.6          |
| 20= | 35=  | Carnegie Mellon University                   | US          | 96                | 94                    | 76                  | 87                    | 67                        | 96                           | 90.0          |
| 20= | 15   | Cornell University                           | US          | 100               | 98                    | 74                  | 93                    | 36                        | 69                           | 90.0          |
| 22  | 8    | University of California, Berkeley           | US          | 100               | 98                    | 59                  | 92                    | 73                        | 88                           | 89.7          |
| 23  | 33=  | University of Edinburgh                      | UK          | 96                | 98                    | 82                  | 76                    | 71                        | 80                           | 88.8          |
| 24  | 46=  | King's College London                        | UK          | 90                | 95                    | 91                  | 70                    | 93                        | 84                           | 88.2          |
| 25  | 29=  | Kyoto University                             | Japan       | 99                | 89                    | 83                  | 90                    | 29                        | 24                           | 87.2          |
| 26  | 18   | Ecole Normale Supérieure, Paris              | France      | 91                | 60                    | 83                  | 98                    | 61                        | 81                           | 87.1          |
| 27  | 22   | University of Melbourne                      | Australia   | 100               | 99                    | 64                  | 70                    | 64                        | 95                           | 85.9          |
| 28  | 37   | Ecole Polytechnique                          | France      | 76                | 94                    | 100                 | 78                    | 70                        | 94                           | 85.1          |
| 29  | 42   | Northwestern University                      | US          | 88                | 97                    | 77                  | 91                    | 35                        | 68                           | 85.0          |
| 30  | 40   | University of Manchester                     | UK          | 88                | 99                    | 77                  | 70                    | 84                        | 85                           | 84.7          |
| 31  | 35=  | University of Sydney                         | Australia   | 99                | 95                    | 51                  | 71                    | 100                       | 95                           | 84.6          |
| 32  | 54=  | Brown University                             | US          | 90                | 77                    | 74                  | 89                    | 75                        | 58                           | 84.5          |
| 33= | 50=  | University of British Columbia               | Canada      | 100               | 91                    | 70                  | 74                    | 35                        | 63                           | 84.3          |
| 33= | 45   | University of Queensland                     | Australia   | 95                | 94                    | 70                  | 68                    | 79                        | 76                           | 84.3          |
| 33= | 19=  | National University of Singapore             | Singapore   | 100               | 93                    | 34                  | 84                    | 100                       | 100                          | 84.3          |
| 36  | 14   | Peking University                            | China       | 100               | 98                    | 98                  | 53                    | 32                        | 26                           | 84.2          |
| 37  | 64=  | University of Bristol                        | UK          | 81                | 98                    | 85                  | 77                    | 88                        | 72                           | 84.1          |
| 38= | 50=  | Chinese University of Hong Kong              | Hong Kong   | 83                | 79                    | 80                  | 80                    | 100                       | 85                           | 83.8          |
| 38= | 29=  | University of Michigan                       | US          | 99                | 96                    | 53                  | 89                    | 41                        | 52                           | 83.8          |
| 40  | 28   | Tsinghua University                          | China       | 95                | 92                    | 100                 | 59                    | 20                        | 36                           | 83.3          |
| 41  | 31   | University of California, Los Angeles        | US          | 100               | 92                    | 56                  | 91                    | 20                        | 36                           | 82.8          |
| 42  | 24   | ETH Zurich                                   | Switzerland | 92                | 75                    | 61                  | 74                    | 100                       | 92                           | 82.5          |
| 43  | 38   | Monash University                            | Australia   | 98                | 97                    | 53                  | 57                    | 99                        | 99                           | 82.1          |
| 44  | 41   | University of New South Wales                | Australia   | 97                | 98                    | 39                  | 76                    | 89                        | 91                           | 81.8          |
| 45  | 27   | University of Toronto                        | Canada      | 100               | 96                    | 21                  | 93                    | 86                        | 50                           | 80.6          |
| 46  | 70=  | Osaka University                             | Japan       | 83                | 75                    | 86                  | 91                    | 17                        | 29                           | 80.0          |
| 47  | 66   | Boston University                            | US          | 91                | 89                    | 49                  | 88                    | 29                        | 88                           | 79.7          |
| 48  | 69   | University of Amsterdam                      | Netherlands | 84                | 81                    | 81                  | 70                    | 76                        | 32                           | 78.6          |
| 49  | 43   | New York University                          | US          | 95                | 93                    | 48                  | 77                    | 29                        | 49                           | 77.8          |
| 50  | 46=  | University of Auckland                       | New Zealand | 95                | 83                    | 38                  | 61                    | 100                       | 99                           | 77.5          |
| 51= | 63   | Seoul National University                    | South Korea | 92                | 54                    | 80                  | 79                    | 16                        | 24                           | 77.1          |
| 51= | 32   | University of Texas at Austin                | US          | 95                | 94                    | 22                  | 92                    | 66                        | 47                           | 77.1          |
| 53= | 58=  | Hong Kong University of Science & Technology | Hong Kong   | 84                | 82                    | 28                  | 92                    | 100                       | 96                           | 76.9          |
| 53= | 78   | Trinity College Dublin                       | Ireland     | 80                | 92                    | 70                  | 58                    | 99                        | 77                           | 76.9          |
| 55= | 84   | University of Washington                     | US          | 84                | 50                    | 73                  | 92                    | 44                        | 33                           | 76.7          |
| 55= | 79=  | University of Wisconsin-Madison              | US          | 94                | 81                    | 31                  | 95                    | 50                        | 44                           | 76.7          |
| 57  | 73   | University of Warwick                        | UK          | 80                | 98                    | 62                  | 58                    | 89                        | 96                           | 76.4          |
| 58  | 44   | University of California, San Diego          | US          | 98                | 39                    | 51                  | 95                    | 23                        | 30                           | 76.3          |
| 59  | 17   | London School of Economics                   | UK          | 89                | 100                   | 65                  | 29                    | 100                       | 100                          | 75.7          |
| 60  | 58=  | Heidelberg University                        | Germany     | 84                | 63                    | 61                  | 78                    | 42                        | 87                           | 75.5          |
| 61  | 96   | Katholieke Universiteit Leuven               | Belgium     | 88                | 83                    | 39                  | 84                    | 51                        | 55                           | 75.0          |
| 62  | 105= | University of Adelaide                       | Australia   | 75                | 86                    | 66                  | 65                    | 77                        | 96                           | 74.7          |
| 63  | 86   | Delft University of Technology               | Netherlands | 75                | 80                    | 66                  | 72                    | 83                        | 67                           | 74.4          |

# THE WORLD'S TOP 200 UNIVERSITIES

|      |      |  | Country     | Peer review score | Employer review score | Staff/student score | Citations/staff score | International staff score | International students score | Overall score |
|------|------|--|-------------|-------------------|-----------------------|---------------------|-----------------------|---------------------------|------------------------------|---------------|
| 64   | 111= | University of Western Australia          | Australia   | 72                | 88                    | 56                  | 78                    | 96                        | 78                           | 74.3          |
| 65=  | 90=  | University of Birmingham                 | UK          | 71                | 93                    | 62                  | 75                    | 84                        | 70                           | 74.1          |
| 65=  | 98   | Ludwig-Maximilians-Universität München   | Germany     | 80                | 60                    | 70                  | 72                    | 58                        | 71                           | 74.1          |
| 67   | 82=  | Technische Universität München           | Germany     | 68                | 71                    | 88                  | 69                    | 59                        | 83                           | 73.9          |
| 68   | 102= | University of Sheffield                  | UK          | 69                | 96                    | 71                  | 69                    | 81                        | 67                           | 73.7          |
| 69   | 61=  | Nanyang Technological University         | Singapore   | 81                | 82                    | 37                  | 72                    | 100                       | 99                           | 73.6          |
| 70   | 85   | University of Nottingham                 | UK          | 69                | 98                    | 64                  | 65                    | 84                        | 88                           | 73.2          |
| 71=  | 61=  | Dartmouth College                        | US          | 60                | 89                    | 91                  | 83                    | 26                        | 53                           | 73.0          |
| 71=  | 111= | Uppsala University                       | Sweden      | 85                | 34                    | 81                  | 72                    | 51                        | 26                           | 73.0          |
| 73   | 77   | University of Illinois                   | US          | 94                | 64                    | 29                  | 86                    | 34                        | 51                           | 72.6          |
| 74=  | 56   | Emory University                         | US          | 61                | 75                    | 99                  | 85                    | 13                        | 39                           | 72.4          |
| 74=  | 124= | University of York                       | UK          | 62                | 91                    | 77                  | 69                    | 76                        | 83                           | 72.4          |
| 76   | 109= | University of St Andrews                 | UK          | 57                | 95                    | 78                  | 69                    | 91                        | 99                           | 72.3          |
| 77=  | 88   | University of Pittsburgh                 | US          | 62                | 45                    | 94                  | 85                    | 78                        | 38                           | 72.2          |
| 77=  | 127  | Purdue University                        | US          | 87                | 79                    | 24                  | 82                    | 76                        | 64                           | 72.2          |
| 79   | 111= | University of Maryland                   | US          | 71                | 62                    | 71                  | 85                    | 48                        | 45                           | 72.1          |
| 80=  | 121  | University of Leeds                      | UK          | 74                | 97                    | 56                  | 69                    | 76                        | 59                           | 72.0          |
| 80=  | 141= | University of Southampton                | UK          | 60                | 90                    | 71                  | 76                    | 88                        | 74                           | 72.0          |
| 82   | 53   | Vanderbilt University                    | US          | 55                | 81                    | 99                  | 87                    | 28                        | 41                           | 71.9          |
| 83   | 81   | University of Glasgow                    | UK          | 71                | 84                    | 71                  | 75                    | 42                        | 54                           | 71.8          |
| 84   | 90=  | Leiden University                        | Netherlands | 81                | 63                    | 35                  | 93                    | 78                        | 40                           | 71.7          |
| 85=  | 60   | Case Western Reserve University          | US          | 59                | 50                    | 99                  | 85                    | 18                        | 80                           | 71.6          |
| 85=  | 116= | Fudan University                         | China       | 87                | 96                    | 45                  | 68                    | 31                        | 31                           | 71.6          |
| 85=  | 87   | University of Vienna                     | Austria     | 86                | 80                    | 12                  | 90                    | 63                        | 89                           | 71.6          |
| 88   | 176  | Queen's University                       | Canada      | 74                | 88                    | 49                  | 79                    | 87                        | 34                           | 71.2          |
| 89   | 95   | Utrecht University                       | Netherlands | 80                | 55                    | 65                  | 80                    | 38                        | 24                           | 70.9          |
| 90=  | 99=  | Pennsylvania State University            | US          | 84                | 82                    | 63                  | 64                    | 18                        | 24                           | 70.5          |
| 90=  | 118  | Tokyo Institute of Technology            | Japan       | 67                | 86                    | 59                  | 91                    | 34                        | 42                           | 70.5          |
| 92   | 102= | Rice University                          | US          | 65                | 45                    | 80                  | 88                    | 39                        | 58                           | 70.3          |
| 93=  | 54=  | University of Copenhagen                 | Denmark     | 82                | 55                    | 51                  | 70                    | 66                        | 62                           | 70.1          |
| 93=  | 181= | University of Montreal                   | Canada      | 88                | 50                    | 31                  | 80                    | 89                        | 41                           | 70.1          |
| 95   | 48=  | University of Rochester                  | US          | 58                | 38                    | 100                 | 84                    | 24                        | 63                           | 69.3          |
| 96   | 170= | University of California, Davis          | US          | 83                | 34                    | 60                  | 82                    | 31                        | 26                           | 69.1          |
| 97=  | 133= | University of Alberta                    | Canada      | 88                | 30                    | 23                  | 87                    | 88                        | 62                           | 68.8          |
| 97=  | 145  | Georgia Institute of Technology          | US          | 79                | 77                    | 25                  | 93                    | 18                        | 74                           | 68.8          |
| 99   | 141= | Cardiff University                       | UK          | 62                | 84                    | 70                  | 65                    | 72                        | 75                           | 68.6          |
| 100  | 116= | University of Helsinki                   | Finland     | 79                | 45                    | 28                  | 93                    | 56                        | 78                           | 68.2          |
| 101  | 139  | University of Liverpool                  | UK          | 55                | 85                    | 70                  | 76                    | 83                        | 64                           | 68.1          |
| 102= | 102= | Georgetown University                    | US          | 57                | 94                    | 69                  | 80                    | 28                        | 73                           | 68.0          |
| 102= | 108  | National Taiwan University               | Taiwan      | 86                | 68                    | 39                  | 79                    | 18                        | 24                           | 68.0          |
| 102= | 168= | Tohoku University                        | Japan       | 53                | 59                    | 96                  | 84                    | 40                        | 32                           | 68.0          |
| 105  | 39   | University of Geneva                     | Switzerland | 62                | 54                    | 39                  | 91                    | 100                       | 100                          | 67.2          |
| 106  | 122  | Lund University                          | Sweden      | 76                | 41                    | 43                  | 81                    | 77                        | 52                           | 66.9          |
| 107  | 211= | University of Colorado                   | US          | 60                | 15                    | 100                 | 85                    | 33                        | 31                           | 66.8          |
| 108  | 155  | McMaster University                      | Canada      | 84                | 49                    | 31                  | 89                    | 28                        | 37                           | 66.6          |
| 109  | 132  | Durham University                        | UK          | 59                | 98                    | 49                  | 74                    | 92                        | 61                           | 66.5          |
| 110  | 130= | University of Virginia                   | US          | 63                | 94                    | 52                  | 86                    | 22                        | 36                           | 66.4          |
| 111  | 172= | Maastricht University                    | Netherlands | 43                | 72                    | 80                  | 81                    | 68                        | 99                           | 66.2          |
| 112= | 128= | Nagoya University                        | Japan       | 53                | 74                    | 83                  | 85                    | 25                        | 30                           | 66.1          |
| 112= | 204= | University of Waterloo                   | Canada      | 82                | 82                    | 17                  | 75                    | 63                        | 49                           | 66.1          |
| 114= | 126  | University of Aarhus                     | Denmark     | 65                | 19                    | 89                  | 69                    | 59                        | 37                           | 65.6          |
| 114= | 75   | University of Basel                      | Switzerland | 52                | 20                    | 99                  | 67                    | 89                        | 81                           | 65.6          |
| 114= | 79=  | University of Otago                      | New Zealand | 69                | 61                    | 39                  | 66                    | 100                       | 92                           | 65.6          |
| 117= | 141= | University of California, Santa Barbara  | US          | 88                | 31                    | 25                  | 89                    | 43                        | 21                           | 65.5          |
| 117= | 64=  | Ecole Polytechnique Fédérale De Lausanne | Switzerland | 58                | 58                    | 97                  | 29                    | 100                       | 100                          | 65.5          |
| 119  | 101  | University of Southern California        | US          | 62                | 77                    | 52                  | 80                    | 25                        | 78                           | 65.4          |
| 120  | 219= | Ohio State University                    | US          | 69                | 77                    | 39                  | 79                    | 67                        | 38                           | 65.3          |
| 121  | 105= | University of Sussex                     | UK          | 58                | 51                    | 58                  | 77                    | 90                        | 83                           | 65.2          |
| 122  | 150= | Texas A&M University                     | US          | 76                | 75                    | 27                  | 81                    | 41                        | 39                           | 64.9          |
| 123  | 76   | Université Catholique de Louvain         | Belgium     | 78                | 60                    | 28                  | 73                    | 50                        | 74                           | 64.8          |
| 124  | 141= | University of Ghent                      | Belgium     | 63                | 29                    | 88                  | 69                    | 47                        | 30                           | 64.5          |
| 125  | 180  | Nanjing University                       | China       | 74                | 72                    | 45                  | 69                    | 59                        | 14                           | 64.4          |
| 126= | 105= | Humboldt-Universität zu Berlin           | Germany     | 71                | 38                    | 71                  | 57                    | 44                        | 68                           | 64.3          |

# THE WORLD'S TOP 200 UNIVERSITIES

|      |      |   | Country     | Peer review score | Employer review score | Staff/student score | Citations/staff score | International staff score | International students score | Overall score |
|------|------|---|-------------|-------------------|-----------------------|---------------------|-----------------------|---------------------------|------------------------------|---------------|
| 126= | 215= | University of Western Ontario                       | Canada      | 68                | 90                    | 30                  | 80                    | 72                        | 30                           | 64.3          |
| 128  | 119  | Hebrew University of Jerusalem                      | Israel      | 86                | 20                    | 18                  | 91                    | 83                        | 14                           | 64.0          |
| 129  | 133= | Newcastle University                                | UK          | 45                | 87                    | 74                  | 67                    | 80                        | 80                           | 63.9          |
| 130= | 194  | Technical University of Denmark                     | Denmark     | 47                | 23                    | 86                  | 84                    | 91                        | 59                           | 63.8          |
| 130= | 67   | Eindhoven University of Technology                  | Netherlands | 48                | 48                    | 99                  | 69                    | 60                        | 48                           | 63.8          |
| 132= | 198= | Korea Advanced Institute of Science & Technol       | South Korea | 65                | 27                    | 64                  | 85                    | 53                        | 28                           | 63.7          |
| 132= | 93=  | Université Pierre et Marie Curie, Paris VI          | France      | 60                | 5                     | 90                  | 73                    | 20                        | 92                           | 63.7          |
| 134  | 224= | University of Arizona                               | US          | 69                | 57                    | 37                  | 88                    | 28                        | 45                           | 63.1          |
| 135  | 226= | University of Florida                               | US          | 62                | 41                    | 77                  | 74                    | 27                        | 32                           | 63.0          |
| 136  | 128= | Kyushu University                                   | Japan       | 50                | 68                    | 80                  | 82                    | 17                        | 31                           | 62.8          |
| 137= | 195  | University of Aberdeen                              | UK          | 45                | 64                    | 78                  | 67                    | 91                        | 73                           | 62.7          |
| 137= | 232= | Indiana University Bloomington                      | US          | 67                | 79                    | 28                  | 85                    | 45                        | 37                           | 62.7          |
| 139  | 282= | Simon Fraser University                             | Canada      | 72                | 72                    | 22                  | 67                    | 97                        | 62                           | 62.6          |
| 140= | 198= | University of California, Irvine                    | US          | 79                | 30                    | 38                  | 82                    | 27                        | 30                           | 62.5          |
| 140= | 109= | University of Zurich                                | Switzerland | 71                | 32                    | 13                  | 95                    | 99                        | 58                           | 62.5          |
| 142= | 187= | University of Minnesota                             | US          | 76                | 43                    | 28                  | 89                    | 26                        | 35                           | 62.3          |
| 142= | 170= | Universität Tübingen                                | Germany     | 60                | 52                    | 46                  | 79                    | 76                        | 65                           | 62.3          |
| 144  | 219= | Universität Freiburg                                | Germany     | 57                | 23                    | 93                  | 61                    | 24                        | 76                           | 62.2          |
| 145  | 153  | University of Bath                                  | UK          | 46                | 96                    | 49                  | 71                    | 91                        | 91                           | 62.0          |
| 146  | 149  | Freie Universität Berlin                            | Germany     | 79                | 16                    | 31                  | 70                    | 70                        | 81                           | 61.9          |
| 147  | 228= | University of Lancaster                             | UK          | 49                | 80                    | 65                  | 57                    | 88                        | 81                           | 61.7          |
| 148  | 97   | Wageningen University                               | Netherlands | 39                | 28                    | 88                  | 87                    | 46                        | 97                           | 61.5          |
| 149= | 154  | City University of Hong Kong                        | Hong Kong   | 62                | 51                    | 37                  | 76                    | 100                       | 51                           | 61.2          |
| 149= | 99=  | Queen Mary, University of London                    | UK          | 55                | 65                    | 81                  | 30                    | 94                        | 92                           | 61.2          |
| 151= | 133= | Hokkaido University                                 | Japan       | 49                | 69                    | 76                  | 82                    | 19                        | 21                           | 61.1          |
| 151= | 123  | University of North Carolina                        | US          | 72                | 86                    | 28                  | 74                    | 22                        | 20                           | 61.1          |
| 151= | 147= | Tel Aviv University                                 | Israel      | 81                | 36                    | 26                  | 89                    | 13                        | 13                           | 61.1          |
| 154  | 165= | Université Libre de Bruxelles                       | Belgium     | 56                | 52                    | 57                  | 69                    | 43                        | 96                           | 61.0          |
| 155= | 165= | University of Science and Technology of China       | China       | 75                | 77                    | 28                  | 76                    | 16                        | 11                           | 60.9          |
| 155= | 152  | University of Notre Dame                            | US          | 56                | 88                    | 43                  | 81                    | 25                        | 50                           | 60.9          |
| 157  | 72   | Ecole Normale Supérieure de Lyon                    | France      | 42                | 45                    | 100                 | 67                    | 41                        | 58                           | 60.8          |
| 158  | 140  | Cranfield University                                | UK          | 31                | 74                    | 100                 | 57                    | 74                        | 100                          | 60.7          |
| 159= | 163  | Michigan State University                           | US          | 63                | 71                    | 33                  | 76                    | 65                        | 45                           | 60.6          |
| 159= | 130= | Tufts University                                    | US          | 42                | 78                    | 61                  | 90                    | 46                        | 44                           | 60.6          |
| 161= | 120  | Keio University                                     | Japan       | 52                | 88                    | 91                  | 45                    | 25                        | 16                           | 59.9          |
| 161= | 48=  | Washington University in St Louis                   | US          | 72                | 62                    | 100                 | 1                     | 27                        | 48                           | 59.9          |
| 163= | 92   | Erasmus University Rotterdam                        | Netherlands | 51                | 97                    | 28                  | 88                    | 64                        | 45                           | 59.7          |
| 163= | 179  | Shanghai Jiao Tong University                       | China       | 72                | 92                    | 38                  | 55                    | 35                        | 11                           | 59.7          |
| 165  | 201= | Universität Stuttgart                               | Germany     | 47                | 81                    | 71                  | 50                    | 52                        | 90                           | 59.4          |
| 166= | 266= | University of Calgary                               | Canada      | 67                | 61                    | 28                  | 81                    | 24                        | 37                           | 58.9          |
| 166= | 138  | Vienna University of Technology                     | Austria     | 53                | 44                    | 68                  | 52                    | 75                        | 88                           | 58.9          |
| 168= | 156= | Universität Göttingen                               | Germany     | 66                | -                     | 73                  | 59                    | 41                        | 54                           | 58.8          |
| 168= | 82=  | Macquarie University                                | Australia   | 61                | 89                    | 23                  | 52                    | 85                        | 99                           | 58.8          |
| 170  | 291  | Helsinki University of Technology                   | Finland     | 52                | 17                    | 94                  | 57                    | 56                        | 44                           | 58.7          |
| 171= | 238  | University of Dundee                                | UK          | 44                | 51                    | 65                  | 71                    | 84                        | 66                           | 58.3          |
| 171= | 222= | Universität Karlsruhe                               | Germany     | 45                | 60                    | 73                  | 59                    | 56                        | 85                           | 58.3          |
| 173= | 207= | University of Bologna                               | Italy       | 78                | 66                    | 24                  | 62                    | 21                        | 26                           | 58.2          |
| 173= | 232= | University of Groningen                             | Netherlands | 48                | 51                    | 69                  | 74                    | 62                        | 29                           | 58.2          |
| 175= | 124= | University of Massachusetts, Amherst                | US          | 62                | 45                    | 34                  | 90                    | 24                        | 31                           | 57.9          |
| 175= | 284= | University of São Paulo                             | Brazil      | 65                | 59                    | 51                  | 63                    | 24                        | 14                           | 57.9          |
| 177= | 448  | University of Campinas                              | Brazil      | 52                | 30                    | 78                  | 73                    | 43                        | 16                           | 57.8          |
| 177= | 219= | University College Dublin                           | Ireland     | 56                | 85                    | 29                  | 63                    | 89                        | 58                           | 57.8          |
| 177= | 215= | Rutgers, The State University of New Jersey         | US          | 72                | 33                    | 30                  | 73                    | 60                        | 24                           | 57.8          |
| 180= | 190= | University of Reading                               | UK          | 45                | 67                    | 52                  | 69                    | 78                        | 78                           | 57.7          |
| 180= | 158= | Waseda University                                   | Japan       | 68                | 92                    | 64                  | 25                    | 26                        | 23                           | 57.7          |
| 182  | 172= | Rheinisch-Westfälische Technische Hochschule Aachen | Germany     | 40                | 80                    | 80                  | 48                    | 53                        | 81                           | 57.5          |
| 183  | 197  | Università Degli Studi Di Roma, La Sapienza         | Italy       | 79                | 63                    | 11                  | 71                    | 15                        | 21                           | 57.3          |
| 184  | 161= | Université Louis Pasteur, Strasbourg I              | France      | 58                | 64                    | 19                  | 82                    | 45                        | 77                           | 57.1          |
| 185= | 239= | University of Leicester                             | UK          | 37                | 60                    | 60                  | 76                    | 77                        | 86                           | 57.0          |
| 185= | 115  | University of Twente                                | Netherlands | 46                | 42                    | 61                  | 76                    | 75                        | 51                           | 57.0          |
| 187  | 252= | University of Antwerp                               | Belgium     | 41                | 7                     | 99                  | 67                    | 57                        | 59                           | 56.9          |
| 188= | 333= | University of Canterbury                            | New Zealand | 62                | 77                    | 30                  | 55                    | 55                        | 66                           | 56.6          |
| 188= | 177  | University of Oslo                                  | Norway      | 61                | 25                    | 54                  | 62                    | 51                        | 55                           | 56.6          |

|      |      |   | Country      | Peer review score | Employer review score | Staff/student score | Citations/staff score | International staff score | International students score | Overall score |
|------|------|---|--------------|-------------------|-----------------------|---------------------|-----------------------|---------------------------|------------------------------|---------------|
| 190  | 258= | University of Surrey                    | UK           | 33                | 79                    | 61                  | 64                    | 95                        | 92                           | 56.4          |
| 191  | 255= | Rensselaer Polytechnic Institute        | US           | 44                | 44                    | 44                  | 90                    | 70                        | 58                           | 56.2          |
| 192= | 172= | KTH, Royal Institute of Technology      | Sweden       | 49                | 17                    | 51                  | 70                    | 90                        | 99                           | 56.1          |
| 192= | 74   | Universidad Nacional Autónoma de México | Mexico       | 74                | 78                    | 64                  | 13                    | 28                        | 13                           | 56.1          |
| 194  | 190= | University of Barcelona                 | Spain        | 69                | 46                    | 22                  | 78                    | 17                        | 36                           | 55.9          |
| 195= | 137  | Radboud Universiteit Nijmegen           | Netherlands  | 40                | 19                    | 82                  | 75                    | 83                        | 31                           | 55.8          |
| 195= | 192= | Queensland University of Technology     | Australia    | 66                | 87                    | 28                  | 39                    | 64                        | 63                           | 55.8          |
| 197= | 147= | Chalmers University of Technology       | Sweden       | 51                | 23                    | 42                  | 83                    | 74                        | 59                           | 55.5          |
| 197= | 181= | Kobe University                         | Japan        | 51                | 67                    | 60                  | 65                    | 22                        | 27                           | 55.5          |
| 199  | 196  | University of Wollongong                | Australia    | 45                | 89                    | 31                  | 58                    | 99                        | 99                           | 55.3          |
| 200= | 257  | University of Cape Town                 | South Africa | 54                | 69                    | 28                  | 68                    | 27                        | 91                           | 54.8          |
| 200= | 146  | RMIT University                         | Australia    | 63                | 88                    | 22                  | 32                    | 74                        | 99                           | 54.8          |

Source: QS Quacquarelli Symonds

# Fine tuning reveals distinctions

## Peer review is key to identifying top quality but a fairer overall picture emerges due to changes in analysis

The extensive discussion of *The Times Higher-QS World University Rankings* that has taken place worldwide since their first appearance in 2004 has strengthened our belief in the general approach we have taken, and we have not made any fundamental changes to our methodology in that time.

Like the first three editions, this ranking is a composite indicator integrating peer review and opinion with quantitative data. The data-gathering for the rankings has grown in quality and quantity during their lifetime.

The core of our methodology is the belief that expert opinion is a valid way to assess the standing of top universities. Our rankings contain two strands of peer review. The more important is academic opinion, worth 40 per cent of the total score available in the rankings. The opinions are gathered, like the rest of the rankings data, by our partners QS Quacquarelli Symonds ([www.topuniversities.com](http://www.topuniversities.com)), which has built up a database of e-mail addresses of active academics across the world. They are invited to tell QS what area of academic life they come from, choosing from science, biomedicine,

technology, social science or the arts and humanities. They are then asked to list up to 30 universities that they regard as the leaders in the academic field they know about, and in 2007 we have strengthened our measures to prevent anyone voting for his or her own institution.

This year we have the opinions of 5,101 experts, of whom 41 per cent are in Europe, the Middle East and Africa, 30 per cent in the Americas, and 29 per cent in the Asia-Pacific region. This includes respondents from 2005 and 2006 whose data have been aggregated with new responses from this year. No data more than three years old is used, and only the most recent data is taken from anyone who has responded more than once.

A further 10 per cent of the possible score in these rankings is derived from active recruiters of graduates. QS asks major global and national employers across the public and private sectors which universities they like to hire from. This year's sample includes 1,471 people, with 43 per cent in the Americas, 32 per cent in Europe and 25 per cent in Asia-Pacific.

The first major change to this year's rankings is in the way that these responses, and the

quantitative data that makes up the rest of the table, are processed. In the past, the topmost institution on any measure has received maximum score. The others are then given a fraction of this percentage proportional to their score.

This approach has the drawback that an exceptional institution distorts the results. In 2006, our measure of citations per staff member gave the top score of 100 to the California Institute of Technology, while Harvard University, in second place, scored only 55. So almost half the variation on this measure was between the first and second-place universities.

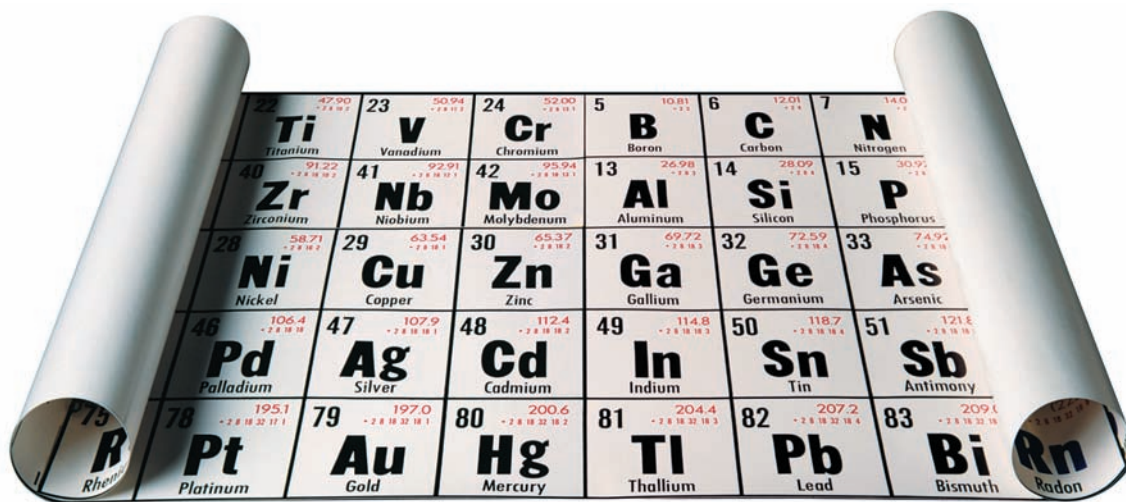
We have solved this problem by switching from this arithmetical measure to a Z-score, which determines how far away any institution's score is from the average. Some universities suffer as a result, such as CalTech on citations and the London School of Economics on overseas students. But this approach gives fairer results and is used by other rankings organisations.

Our quantitative measures are designed to capture key components of academic success. QS gathers the underlying data from national bodies where possible, but much of it is collected directly from universities themselves. Of these measures, staff-to-student ratio is a classic gauge of an institution's commitment to teaching. This

year we have improved its rigour by obtaining full and part-time numbers for staff and students, and using full-time equivalents throughout as far as possible. This measure is worth 20 per cent of the total possible score.

A further 20 per cent of the possible score is designed to reward research excellence. Citations of an institution's published papers by others are the accepted measure of research quality. We have used five years of citations between 2002 and 2006 as indexed by Scopus, a leading supplier of such data. Scopus ([www.scopus.com](http://www.scopus.com)) has replaced Thomson Scientific as supplier of citations data. We are confident that Scopus's coverage is at least as thorough as Thomson's, especially in non-English language journals. We divide the number of citations by the number of full-time equivalent staff to give an indication of the density of research firepower on each university campus.

The final part of our score is designed to measure universities' attractiveness to staff and students. It allots five percentage points for the number of their staff who come from other countries, and a further five for their percentage of overseas students. It shows us which institutions are serious about globalisation, and points to the places where ambitious and mobile academics and students want to be. **Martin Ince** ★



# Rewards for the well-resourced

The deep pockets of many US institutions, and a select few in the UK, attest to the high cost of attaining success

Where are the world's top scientists? Over the four years of *The Times Higher-QS World University Rankings*, the verdict of the experts we poll has been unanimous: the world's top scientists are in the UK and the US. Last year, they made Cambridge and Oxford the top two science universities. This year, they have chosen the University of California, Berkeley, and the Massachusetts Institute of Technology, with Cambridge and Oxford in third and eighth places respectively.

In this table and the following faculty-specific rankings, we place universities in order of the opinions of our peer reviewers, who are active academics in the subjects on which they are giving their views. This year they have put US and UK universities in the top 11 places. Tokyo, in 12th position, is the top institution from any other country.

But there is no room for British triumphalism. The large amount of research funding that goes into a small number of UK universities appears, on the evidence of this table, to buy top performance for a few universities, but is less good at building strength in depth. The US has 24 universities in this top 50, but the UK manages only three, putting it level with France and Canada, behind Australia.

France and Germany's relatively modest showing in this table is often attributed to the fact that many of their scientists work in state labs, not universities. This argument is strengthened by this year's Nobel prize awards. The prize for physics was shared by Albert Fert, who works partly for the company Thales and partly at Université Paris-Sud, and Peter Grünberg, who works in the Jülich research centre in Germany. The prize for chemistry went to Gerhard Ertl, who is based at the Max-Planck Society, the biggest German research institution. However, we are ranking universities, not countries.

This table also shows citations per paper over a five-year period for science publications, as measured by Scopus. Because the subject area being analysed is different for each institution, this shows which universities are producing research with the most impact. We have not aggregated the two columns to produce an overall score. Experts on composite tables such as this agree that combining just two measures such as these would not

produce a meaningful result.

Some US institutions such as New York University are rated far more modestly by other researchers than their citations might suggest. At the other extreme, 11 of the top 20 universities as measured by our peer reviewers manage fewer than seven citations per paper.

Drew Faust, installed last month as president of Harvard University, can draw comfort from the fact that her university is number one in the world overall, as well as in life sciences and biomedicine, with its biggest component, Harvard Medical School, regarded as the best. And so it should be. It has more than 11,000 staff, an annual budget of \$470 million (£230 million) and an endowment given as \$3,256,509,589.

Not everyone agrees that Harvard is top of the medical tree. It has won only two Nobel prizes for medicine since 1981. But the esteem in which it is held by biomedical academics around the world suggests it is producing key discoveries at an impressive rate.

There may be arguments about where the best economists or historians ply their trade. But this table shows that the sheer amount of cash available for medical research in the US enables it to dominate this high-pressure, big-money field, with 22 of the top 50 institutions. The funds open to US institutions include about \$23 billion a year for universities from the National Institutes of Health, plus funding from large medical charities and a range of government bodies such as the Veterans Health Administration. The Bill and Melinda Gates Foundation adds further to US resources for biomedical research.

However, this table suggests that recent increases in UK health

research are paying off. The field is led by the Medical Research Council, whose budgets have grown rapidly in recent years and are set to expand further as its activities are co-ordinated more closely with National Health Service research. And as well as state funding via the MRC, the UK is home to the Wellcome Trust, the biggest medical charity outside the US. Cambridge and Oxford appear second and third, with Imperial College London seventh. A total of seven UK universities are in this top 50.

We separate this analysis from our look at the rest of the sciences because the sheer amount of biomedical research, and its ferocious publishing culture, would swamp the less prosperous and cut-throat natural sciences if we merged the two. But as well as being important and well-funded, biomedical research is controversial: think of stem cells or xenotransplantation.

But there is little here to suggest that the Bush Administration's unease about some of these developments is hobbling medical scientists in the US. Apart from some high-profile defections to Asia and Europe, the US is where the top researchers in this field want to be.

Asian nations with ambitions on the world stage have realised that biomedicine offers a unique chance to carve out new industries and markets. Universities in Singapore, Korea, Hong Kong and China appear in this table along with more established institutions in Japan, Australia and New Zealand. Our citations data suggest they are producing some well-regarded papers.

By contrast, Chinese and Russian universities are well liked by their academic peers but produce few high-impact research papers. **Martin Ince** ★

## TOP 50 UNIVERSITIES FOR NATURAL SCIENCES

|     |   | Country     | Score | Citations per paper |
|-----|---|-------------|-------|---------------------|
| 1   | University of California, Berkeley          | US          | 100   | 9.0                 |
| 2   | Massachusetts Institute of Technology       | US          | 97.6  | 7.8                 |
| 3   | University of Cambridge                     | UK          | 92.9  | 6.2                 |
| 4   | Harvard University                          | US          | 92.6  | 11.1                |
| 5   | Princeton University                        | US          | 90.2  | 12.2                |
| 6   | California Institute of Technology          | US          | 87.4  | 9.1                 |
| 7   | Stanford University                         | US          | 86.9  | 6.3                 |
| 8   | University of Oxford                        | UK          | 86.7  | 6.3                 |
| 9   | Cornell University                          | US          | 77.4  | 7.2                 |
| 10  | Yale University                             | US          | 72.4  | 8.8                 |
| 11  | University of Chicago                       | US          | 72.0  | 13.8                |
| 12  | University of Tokyo                         | Japan       | 70.6  | 5.6                 |
| 13  | Imperial College London                     | UK          | 70.2  | 5.3                 |
| 14  | University of California, Los Angeles       | US          | 67.6  | 7.8                 |
| 15  | Peking University                           | China       | 67.5  | 3.2                 |
| 16  | University of Toronto                       | Canada      | 66.5  | 6.1                 |
| 17  | Kyoto University                            | Japan       | 65.8  | 5.0                 |
| 18  | ETH Zurich                                  | Switzerland | 63.0  | 4.0                 |
| 19  | Australian National University              | Australia   | 62.7  | 5.5                 |
| 20  | Ecole Normale Supérieure, Paris             | France      | 62.6  | 6.9                 |
| 21  | Columbia University                         | US          | 62.3  | 9.0                 |
| 22  | University of California, Santa Barbara     | US          | 58.2  | 8.9                 |
| 23  | University of Texas at Austin               | US          | 56.2  | 6.3                 |
| 24  | University of Michigan                      | US          | 56.0  | 6.1                 |
| 25  | National University of Singapore            | Singapore   | 55.8  | 4.1                 |
| 26  | McGill University                           | Canada      | 53.6  | 4.4                 |
| 27= | University of California, San Diego         | US          | 53.3  | 6.2                 |
| 27= | Lomonosov Moscow State University           | Russia      | 53.3  | 2.5                 |
| 29  | University of Illinois                      | US          | 52.0  | 6.1                 |
| 30  | University of British Columbia              | Canada      | 51.7  | 5.8                 |
| 31  | Ecole Polytechnique                         | France      | 51.3  | 5.2                 |
| 32  | Université Pierre et Marie Curie, Paris VI  | France      | 49.7  | 4.9                 |
| 33  | University of Melbourne                     | Australia   | 49.5  | 5.2                 |
| 34  | Tsinghua University                         | China       | 48.0  | 2.5                 |
| 35  | University of Pennsylvania                  | US          | 47.2  | 10.3                |
| 36  | Technion – Israel Institute of Technology   | Israel      | 47.1  | 5.7                 |
| 37  | Johns Hopkins University                    | US          | 46.9  | 10.1                |
| 38  | Seoul National University                   | S Korea     | 45.8  | 4.3                 |
| 39  | University of Wisconsin-Madison             | US          | 45.4  | 5.9                 |
| 40= | University of Science & Technology of China | China       | 44.6  | 2.5                 |
| 40= | Università Degli Studi Di Roma, La Sapienza | Italy       | 44.6  | 4.0                 |
| 42  | New York University                         | US          | 43.4  | 11.3                |
| 43  | University of Sydney                        | Australia   | 42.9  | 4.4                 |
| 44  | Pennsylvania State University               | US          | 42.4  | 6.6                 |
| 45= | Heidelberg University                       | Germany     | 42.2  | 6.0                 |
| 45= | Stony Brook University                      | US          | 42.2  | 2.0                 |
| 47= | Utrecht University                          | Netherlands | 42.1  | 5.8                 |
| 47= | University of Waterloo                      | Canada      | 42.1  | 3.8                 |
| 49  | Georgia Institute of Technology             | US          | 41.7  | 5.6                 |
| 50  | Carnegie Mellon University                  | US          | 41.5  | 8.0                 |

Source: QS Quacquarelli Symonds.

## TOP 50 UNIVERSITIES FOR LIFE SCIENCES AND BIOMEDICINE

|     |  | Country   | Score | Citations |
|-----|--|-----------|-------|-----------|
| 1   | Harvard University                     | US        | 100   | 9.1       |
| 2   | University of Cambridge                | UK        | 93.3  | 7.5       |
| 3   | University of Oxford                   | UK        | 87.1  | 7.8       |
| 4   | Johns Hopkins University               | US        | 86.7  | 7.1       |
| 5   | University of California, Berkeley     | US        | 85.4  | 7.7       |
| 6   | Stanford University                    | US        | 82.0  | 7.7       |
| 7   | Imperial College London                | UK        | 75.6  | 6.2       |
| 8   | Yale University                        | US        | 73.8  | 7.5       |
| 9   | Massachusetts Institute of Technology  | US        | 73.5  | 11.3      |
| 10  | McGill University                      | Canada    | 70.8  | 5.5       |
| 11  | University of California, San Diego    | US        | 66.9  | 7.2       |
| 12  | National University of Singapore       | Singapore | 66.3  | 4.4       |
| 13  | University of Tokyo                    | Japan     | 65.2  | 4.8       |
| 14  | University of Toronto                  | Canada    | 63.9  | 6.3       |
| 15  | University of California, Los Angeles  | US        | 63.4  | 5.6       |
| 16  | Cornell University                     | US        | 62.8  | 5.9       |
| 17  | University of Melbourne                | Australia | 61.1  | 4.5       |
| 18  | Peking University                      | China     | 61.0  | 2.4       |
| 19  | Duke University                        | US        | 60.0  | 7.0       |
| 20  | University of British Columbia         | Canada    | 59.5  | 5.0       |
| 21  | California Institute of Technology     | US        | 57.9  | 10.4      |
| 22  | Monash University                      | Australia | 57.8  | 4.2       |
| 23  | University of Sydney                   | Australia | 57.7  | 4.3       |
| 24  | Karolinska Institute                   | Sweden    | 55.7  | 5.5       |
| 25  | Columbia University                    | US        | 55.1  | 6.8       |
| 26  | University College London              | UK        | 54.8  | 6.2       |
| 27  | Kyoto University                       | Japan     | 54.5  | 4.6       |
| 28  | Australian National University         | Australia | 54.4  | 4.9       |
| 29  | Princeton University                   | US        | 53.7  | 7.5       |
| 30  | University of Edinburgh                | UK        | 53.2  | 6.0       |
| 31  | University of Queensland               | Australia | 53.1  | 4.4       |
| 32  | King's College London                  | UK        | 52.0  | 5.0       |
| 33  | University of Michigan                 | US        | 51.6  | 6.4       |
| 34  | Washington University, St Louis        | US        | 51.5  | 0.6       |
| 35  | University of Pennsylvania             | US        | 51.1  | 6.6       |
| 36  | University of Hong Kong                | Hong Kong | 50.4  | 5.4       |
| 37= | University of Chicago                  | US        | 49.7  | 6.6       |
| 37= | University of California, Davis        | US        | 49.7  | 4.2       |
| 39  | Osaka University                       | Japan     | 48.8  | 5.3       |
| 40  | Uppsala University                     | Sweden    | 48.6  | 5.0       |
| 41  | University of Auckland                 | NZ        | 45.9  | 4.5       |
| 42  | University of Washington               | US        | 43.7  | 6.6       |
| 43  | Heidelberg University                  | Germany   | 43.1  | 4.7       |
| 44  | Boston University                      | US        | 42.9  | 6.6       |
| 45  | University of Wisconsin-Madison        | US        | 42.8  | 5.7       |
| 46  | Seoul National University              | S Korea   | 42.7  | 3.3       |
| 47  | New York University                    | US        | 42.5  | 5.6       |
| 48  | University of Bristol                  | UK        | 41.6  | 4.9       |
| 49  | Université Louis Pasteur, Strasbourg I | France    | 40.9  | 4.9       |
| 50  | University of New South Wales          | Australia | 40.3  | 4.4       |

Source: QS Quacquarelli Symonds.

# The innovators and educators

Technology powerhouses and social science leaders boast a global reach, reflecting governments' awareness of these fields' economic impact

**O**ur listing of the world's top-rated universities for technology is the only place in the *The Times Higher-QS World University Rankings* where Harvard University is not at or near the top. It is in its lowest place in our tables as rival Massachusetts Institute of Technology takes the top slot.

The US has 19 universities in our top 50 table, which is headed by MIT – probably the world's biggest single technology innovator of the postwar period – followed by the University of California, Berkeley, Stanford University and the California Institute of Technology, the intellectual motors of Silicon Valley. CalTech, with 1,200 academic staff, 1,200 postgraduate students and fewer than 900 undergraduates, is probably better geared up to produce top research than any other university in the world. Located just a few miles from Hollywood, it may also be the only institution to list prices for using its campus as a backdrop.

This table shows that European countries that seek to base their economic futures on quality manufacturing, rather than quantity, take engineering seriously. The UK has four universities here, with Cambridge and Imperial College London in the top ten. A further nine are in continental Europe, including two in Switzerland, which balances banking with mainstream engineering in its economic mix.

Our decision this year to list the separate elements of the Indian Institutes of Technology rather

than seek opinion of the IIT overall has led to its leaving our main rankings. But their peers around the world have voted two IITs – Mumbai and Delhi – into this table.

Technology has emerged as a key battleground in Asian economic competition and the ranking reveals the institutions in the struggle. Tsinghua University, which likes to be known as the MIT of China, appears here in 16th place as the best placed of China's three entries.

But Japan's longer established technological dominance is reflected in the University of Tokyo's place as Asia's top technology university. It is in ninth spot, one above the National University of Singapore. Singapore's Nanyang University, a specialist technology institution, is at 25. South Korea's emergence as a technology power is supported by the appearance here of the Korea Advanced Institute of Science and Technology, founded in 1971 in a deliberate attempt to create a Korean MIT.

Our listing of citations per paper shows that engineers and IT academics cite fewer papers than their scientific and medical colleagues. An average MIT biomedical paper has 11.3 citations; one in technology gets only four. The most cited papers come from Ecole Polytechnique Fédérale de Lausanne, the French-speaking half of the Swiss federal university system, despite its modest 47th place in the peer review.

**T**he social sciences affect more people every day than perhaps any other area of academic life. The economists who decide government policies are one species of social scientist, while the teachers our children encounter at school are another. Management is a social science, and people who run businesses around the world are increasingly likely to have a formal academic



qualification such as an MBA.

Recent years have been marked by a growing convergence between the social and natural sciences. The former appear in their own right in the European Commission's current Seventh Framework Programme for research. Like the arts and humanities, they are also becoming more international.

Globalisation creates a new need for international knowledge about societies as well as economies, while the post 9/11 world has a raised awareness that cultures that once seemed obscure might suddenly become important to know about. At the same time, rapid technological and social change in advanced societies

means that the insights of social science are increasingly essential.

This table shows that world opinion regards the biggest US and UK universities as leaders in the social sciences. Harvard, Berkeley, Stanford and Yale dominate from the US, and Oxford and Cambridge from the UK. But the top UK institution is the London School of Economics, which takes much the same role in the UK social sciences as Imperial College London does in science and engineering.

Because we list only institutions that teach undergraduates, this table does not include postgraduate universities such as the Institute of Education in London or the London Business School. But it is apparent that having a business school is a route to garnering esteem in the social sciences. Harvard's is possibly the world's best known, and joins the John F. Kennedy School of Government among the centres that put Harvard top of this table. Other big US business schools, such as Sloan and Wharton, probably account for the presence of Massachusetts Institute of Technology and University of Pennsylvania at 11 and 22.

Of the five faculty-specific analyses on these pages, this is the one in which Asian institutions outside Australia and New Zealand show up least well. China, Japan, Singapore and Hong Kong appear only six times, while the US has 21 institutions.

Our analysis of citations in the social sciences shows that, in contrast to medicine, Europe has the most cited researchers. University College London is the clear winner, despite being 32nd in our peer review for the social sciences. In future years, US and European social scientists may draw further ahead of the rest of the world as the field becomes more expensive and more dependent on advanced methodology and data-gathering.

**Martin Ince** ★

**European states seeking to base their economic futures on quality manufacturing, rather than quantity, take engineering seriously**

## TOP 50 UNIVERSITIES FOR TECHNOLOGY

|     |  | Country     | Score | Citations |
|-----|--|-------------|-------|-----------|
| 1   | Massachusetts Institute of Technology        | US          | 100   | 4.0       |
| 2   | University of California, Berkeley           | US          | 94.5  | 4.2       |
| 3   | Stanford University                          | US          | 84.7  | 4.3       |
| 4   | California Institute of Technology           | US          | 80.0  | 3.7       |
| 5   | University of Cambridge                      | UK          | 75.6  | 3.4       |
| 6   | Imperial College London                      | UK          | 72.1  | 2.7       |
| 7   | Carnegie Mellon University                   | US          | 71.0  | 3.6       |
| 8   | Georgia Institute of Technology              | US          | 68.0  | 2.9       |
| 9   | University of Tokyo                          | Japan       | 65.1  | 2.1       |
| 10  | National University of Singapore             | Singapore   | 63.8  | 2.9       |
| 11  | University of Toronto                        | Canada      | 60.4  | 3.5       |
| 12  | University of Oxford                         | UK          | 60.2  | 3.7       |
| 13  | ETH Zurich                                   | Switzerland | 59.6  | 2.5       |
| 14  | Princeton University                         | US          | 59.2  | 4.7       |
| 15  | Harvard University                           | US          | 58.3  | 5.1       |
| 16  | Tsinghua University                          | China       | 58.2  | 1.2       |
| 17  | Delft University of Technology               | Netherlands | 57.7  | 2.6       |
| 18  | University of California, Los Angeles        | US          | 57.4  | 4.1       |
| 19  | University of Illinois                       | US          | 57.3  | 3.5       |
| 20  | Cornell University                           | US          | 56.7  | 4.4       |
| 21  | University of Melbourne                      | Australia   | 54.1  | 2.9       |
| 22  | Tokyo Institute of Technology                | Japan       | 53.8  | 1.8       |
| 23  | Hong Kong University of Science & Technology | Hong Kong   | 53.6  | 3.1       |
| 24  | Purdue University                            | US          | 53.3  | 2.7       |
| 25= | Technion – Israel Institute of Technology    | Israel      | 53.1  | 1.8       |
| 25= | Nanyang Technological University             | Singapore   | 53.1  | 2.1       |
| 27  | McGill University                            | Canada      | 52.8  | 2.4       |
| 28  | University of New South Wales                | Australia   | 52.5  | 2.5       |
| 29  | Kyoto University                             | Japan       | 50.7  | 2.0       |
| 30= | University of British Columbia               | Canada      | 50.5  | 2.6       |
| 30= | University of Texas at Austin                | US          | 50.5  | 2.9       |
| 32  | University of Michigan                       | US          | 50.4  | 3.6       |
| 33  | Indian Institute of Technology Bombay        | India       | 49.4  | 1.6       |
| 34  | Ecole Polytechnique                          | France      | 48.5  | 2.3       |
| 35  | University of Waterloo                       | Canada      | 48.4  | 2.0       |
| 36  | Peking University                            | China       | 48.2  | 1.8       |
| 37  | Indian Institute of Technology Delhi         | India       | 47.3  | 1.7       |
| 38  | University of California, San Diego          | US          | 47.0  | 3.8       |
| 39  | Australian National University               | Australia   | 46.4  | 2.4       |
| 40  | Technische Universität München               | Germany     | 44.7  | 2.5       |
| 41= | University of Sydney                         | Australia   | 44.5  | 2.3       |
| 41= | Texas A&M University                         | US          | 44.5  | 2.4       |
| 43  | University of Manchester                     | UK          | 43.9  | 2.6       |
| 44  | Monash University                            | Australia   | 42.8  | 2.0       |
| 45  | Virginia Polytechnic Institute               | US          | 42.7  | 2.2       |
| 46  | Yale University                              | US          | 41.7  | 4.5       |
| 47  | Ecole Polytechnique Fédérale de Lausanne     | Switzerland | 41.6  | 5.3       |
| 48  | Korea Advanced Inst of Science & Technology  | S Korea     | 41.3  | 1.9       |
| 49  | University of Science & Technology of China  | China       | 40.8  | 1.0       |
| 50  | Rensselaer Polytechnic Institute             | US          | 40.6  | 3.3       |

Source: QS Quacquarelli Symonds

## TOP 50 UNIVERSITIES FOR SOCIAL SCIENCES

|     |                                       | Country     | Score | Citations |
|-----|---------------------------------------|-------------|-------|-----------|
| 1   | Harvard University                    | US          | 100   | 5.6       |
| 2   | University of California, Berkeley    | US          | 93.9  | 5.2       |
| 3   | London School of Economics            | UK          | 83.4  | 2.2       |
| 4   | Yale University                       | US          | 82.8  | 4.3       |
| 5   | Stanford University                   | US          | 82.2  | 5.0       |
| 6   | University of Oxford                  | UK          | 81.6  | 4.2       |
| 7   | University of Cambridge               | UK          | 81.1  | 4.1       |
| 8   | University of Chicago                 | US          | 79.6  | 4.4       |
| 9   | Princeton University                  | US          | 78.9  | 4.5       |
| 10  | Columbia University                   | US          | 76.5  | 4.3       |
| 11  | Massachusetts Institute of Technology | US          | 75.8  | 4.9       |
| 12  | McGill University                     | Canada      | 72.1  | 3.8       |
| 13  | University of Toronto                 | Canada      | 71.8  | 3.6       |
| 14  | University of British Columbia        | Canada      | 70.8  | 3.4       |
| 15  | University of California, Los Angeles | US          | 67.8  | 4.9       |
| 16  | Australian National University        | Australia   | 66.2  | 2.4       |
| 17= | Cornell University                    | US          | 61.8  | 3.9       |
| 17= | University of Melbourne               | Australia   | 61.8  | 3.7       |
| 19  | University of Michigan                | US          | 60.4  | 4.1       |
| 20  | National University of Singapore      | Singapore   | 59.5  | 2.1       |
| 21  | New York University                   | US          | 58.3  | 4.0       |
| 22  | University of Pennsylvania            | US          | 57.7  | 4.2       |
| 23  | Peking University                     | China       | 56.3  | 2.1       |
| 24  | University of Tokyo                   | Japan       | 54.2  | 2.2       |
| 25  | Duke University                       | US          | 53.9  | 5.2       |
| 26  | Monash University                     | Australia   | 51.8  | 2.1       |
| 27  | University of Sydney                  | Australia   | 50.7  | 2.7       |
| 28  | Carnegie Mellon University            | US          | 48.9  | 4.5       |
| 29  | Northwestern University               | US          | 48.6  | 3.8       |
| 30  | University of New South Wales         | Australia   | 47.7  | 3.7       |
| 31  | University of Hong Kong               | Hong Kong   | 47.2  | 2.1       |
| 32  | University College London             | UK          | 46.4  | 7.6       |
| 33  | University of California, San Diego   | US          | 45.7  | 4.5       |
| 34  | University of Queensland              | Australia   | 45.2  | 3.1       |
| 35  | University of Auckland                | NZ          | 45.0  | 2.9       |
| 36  | Boston University                     | US          | 44.8  | 4.5       |
| 37  | University of Wisconsin-Madison       | US          | 44.5  | 4.3       |
| 38  | Johns Hopkins University              | US          | 44.1  | 4.1       |
| 39  | Université de Montréal                | Canada      | 43.1  | 3.2       |
| 40  | University of Warwick                 | UK          | 42.3  | 2.9       |
| 41  | York University                       | Canada      | 41.9  | 2.6       |
| 42  | Université Catholique de Louvain      | Belgium     | 41.5  | 2.9       |
| 43  | Queen's University                    | Canada      | 41.4  | 3.2       |
| 44  | Tsinghua University                   | China       | 41.1  | 1.3       |
| 45  | University of Copenhagen              | Denmark     | 40.2  | 3.1       |
| 46  | University of Vienna                  | Austria     | 39.8  | 3.2       |
| 47  | University of Edinburgh               | UK          | 39.6  | 3.6       |
| 48= | Chinese University of Hong Kong       | Hong Kong   | 39.4  | 2.5       |
| 48= | University of Amsterdam               | Netherlands | 39.4  | 3.4       |
| 50  | Pennsylvania State University         | US          | 38.9  | 3.1       |

Source: QS Quacquarelli Symonds

# Works of art in the making

Despite their essential role in leading political and cultural debate, arts and humanities are often relegated to the back seat by the sciences

Researchers in the arts and humanities often do not publish their most important work in refereed journals. They might write a book, compose a symphony or curate an exhibition with a scholarly catalogue. This means that academic success is harder to define here than in other areas of scholarship. It also explains why this table does not attempt to measure academic achievement in these subjects by looking at publications.

But the story it tells about excellence in these areas is revealing. The subjects range widely from philosophy, which is almost by definition the least applied discipline in the academy, to modern languages, an essential area in the globalised economy. They include long-established fields such as music and history, and others, such as museum studies and tourism, which are growing as economies transform.

Politicians rarely mention the arts and humanities in speeches on the importance of research to national economic success. The UK has established a research council to fund them only in the past two years. But their importance means they are central to the success of any large university aiming to be good at the full range of academic disciplines. Harvard University is

once again top of this table, and is joined by other global universities such as Oxford, Cambridge and Yale universities and the University of California, Berkeley.

Strength in the arts and humanities is also a must for universities that aim to be

“Arts and humanities are central to the success of any large university aiming to be good at the full range of academic disciplines”

national leaders in political and cultural debate. Hence the appearance of the universities of Toronto, McGill, Tokyo, Peking, the London School of Economics and the Australian National University in prominent positions.

The fact that 16 nations appear in this top 50 is evidence of the inclusive approach of our peer reviewers. The arts and humanities are perhaps the least globalised subjects of all. Every country has its own literature, history, music and politics. But the table shows that the quality of national research in these fields is recognised worldwide. And some areas of the humanities such as religion have emerged from genteel obscurity to new political and cultural importance in a globalised world with a new awareness of security and international tension.

This table also confirms the world cultural value of English. The top 20 institutions include 19 in the English-speaking world. Peking, in 18th position, is the highest placed institution not to work entirely in English. Some Asian universities are responding

“Every country has its own literature, history, music and politics, but the table shows that the quality of national research in these fields is recognised worldwide”

## TOP 50 UNIVERSITIES FOR ARTS & HUMANITIES

| Rank | Name                                   | Country     | Score |
|------|--|-------------|-------|
| 1    | Harvard University                     | US          | 100.0 |
| 2    | University of California, Berkeley     | US          | 96.5  |
| 3    | University of Oxford                   | UK          | 94.4  |
| 4    | University of Cambridge                | UK          | 92.3  |
| 5    | Yale University                        | US          | 84.3  |
| 6    | Columbia University                    | US          | 83.3  |
| 7    | Princeton University                   | US          | 80.1  |
| 8    | University of Toronto                  | Canada      | 79.5  |
| 9    | University of Chicago                  | US          | 77.6  |
| 10   | Australian National University         | Australia   | 75.9  |
| 11   | Stanford University                    | US          | 74.7  |
| 12   | McGill University                      | Canada      | 71.3  |
| 13   | University of California, Los Angeles  | US          | 68.4  |
| 14   | University of British Columbia         | Canada      | 67.2  |
| 15   | University of Sydney                   | Australia   | 66.6  |
| 16   | Cornell University                     | US          | 64.4  |
| 17   | University of Melbourne                | Australia   | 63.9  |
| 18   | Peking University                      | China       | 61.2  |
| 19   | University of Michigan                 | US          | 60.3  |
| 20   | Duke University                        | US          | 58.6  |
| 21=  | National University of Singapore       | Singapore   | 57.6  |
| 21=  | Johns Hopkins University               | US          | 57.6  |
| 23   | New York University                    | US          | 56.7  |
| 24   | University of Tokyo                    | Japan       | 54.7  |
| 25   | Massachusetts Institute of Technology  | US          | 54.4  |
| 26   | London School of Economics             | UK          | 54.0  |
| 27   | University College London              | UK          | 53.9  |
| 28   | University of Edinburgh                | UK          | 53.5  |
| 29   | Université Paris-Sorbonne, Paris IV    | France      | 52.5  |
| 30   | Monash University                      | Australia   | 52.1  |
| 31   | Brown University                       | US          | 51.7  |
| 32   | University of Auckland                 | New Zealand | 51.0  |
| 33   | Ecole Normale Supérieure, Paris        | France      | 50.9  |
| 34   | Kyoto University                       | Japan       | 50.5  |
| 35   | University of New South Wales          | Australia   | 49.6  |
| 36   | King's College London                  | UK          | 49.3  |
| 37   | Trinity College Dublin                 | Ireland     | 48.6  |
| 38   | Freie Universität Berlin               | Germany     | 48.4  |
| 39   | Hebrew University of Jerusalem         | Israel      | 48.0  |
| 40   | Leiden University                      | Netherlands | 47.3  |
| 41   | University of Amsterdam                | Netherlands | 47.2  |
| 42   | University of Texas at Austin          | US          | 46.3  |
| 43   | Katholieke Universiteit Leuven         | Belgium     | 45.7  |
| 44   | University of Hong Kong                | Hong Kong   | 44.9  |
| 45   | University of Queensland               | Australia   | 44.0  |
| 46   | Fudan University                       | China       | 43.2  |
| 47   | University of Bologna                  | Italy       | 42.9  |
| 48=  | School of Oriental and African Studies | UK          | 41.9  |
| 48=  | Indiana University Bloomington         | US          | 41.9  |
| 50   | University of Pennsylvania             | US          | 41.7  |

Source: QS Quacquarelli Symonds.

by delivering more arts and humanities teaching in English. It may seem strange to teach your own history in a foreign language, but doing so makes it more available to foreign students, while publishing in English makes research more visible. These reforms are likely to affect Asian and continental European universities' future standing in this table.

Martin Ince ★



# What the pick of the crop means for the rest of the field

**We look at the top performers on each measure and suggest what their success means for the sector's development**

**T**he *Times Higher*-QS World University Rankings are a composite measure in which six criteria are added together to produce an overall table. One measure, peer review, accounts for 40 per cent of the possible score, while two others account for 20 percentage points each, with one worth 10 per cent and the other two worth 5 per cent each.

This division of possible points means it is not possible to achieve a high score in these rankings by being excellent in only one category. But it also means that two universities can obtain similar scores despite

having widely differing strengths and weaknesses.

This year's changes in the rankings methodology, explained on page 7, mean that exceptional outlying scores on any measure no longer have a distorting effect on the whole picture. While this is to the good overall, it means that the top performers on any specific measure now tend to bunch at a score of 100 or just below. In the main tables, we show the scores for each measure to the nearest 1 per cent, but here we display one decimal place.

The most significant of our measures is academic peer review. It accounts for 40 per cent of the available score and is the most distinctive feature of our World University Rankings.

This analysis combines the opinions of 5,101 individuals, up from 1,300 in 2004, the first year of our rankings. Although Americans make up only 30 per cent of our sample (see page 7), there is general agreement around the world that the US has the best universities. Berkeley and Harvard, the big two of the US system on the East and West

coasts, both have a perfect score on this measure. Also prominent on this measure are Stanford, Yale, Princeton, the Massachusetts Institute of Technology and the University of California, Los Angeles.

However, it is also apparent that academics place Oxford and Cambridge universities on roughly the same rung as their main US rivals. In addition, the effort put into staying level with its US competitors by McGill, Canada's top institution, is seen to be paying off in terms of world esteem. (We regret that the printed *Times Higher* rankings supplement refers to Toronto instead of McGill in this description.)

MIT is the only specialist institution to appear in this top ten. This measure groups results in all five areas of academic life that we survey and it is hard to do well here without being visible in all or most of them. Despite its name, MIT operates in most arenas of scholarship.

This part of the rankings is the one where the rise of Asian universities is least apparent, but future years may yet see them get

to the top in the opinion of fellow academics around the world.

The second of our measures, the employer review, accounts for only 10 per cent of the possible score but is of burning interest to students and their parents, as well as to universities themselves. This year, 1,471 recruiters of graduates from around the world told us where they like to get their employees. Their response suggests that graduate recruitment genuinely has become a global enterprise.

Although only 32 per cent of this sample is in Europe, these recruiters are overwhelmingly in agreement that the UK is the place to shop for graduates.

They put Cambridge and Oxford universities at the top of the list, with the London School of Economics third and the University of Manchester in fifth place. Manchester's bid to be the north of England's answer to Oxbridge and London already seems to be convincing employers.

Despite this British success, Harvard, MIT and Stanford are also well placed on this measure. Their appearance alongside

Oxbridge and the LSE suggests that employers are a conservative breed.

The University of Melbourne emerges by some distance as Asia's favourite institution with recruiters. It remains to be seen what recruiters will make of the novel degree system Melbourne is now introducing.

This table confirms that recruiters like big technology universities such as MIT and Imperial College London.

Two of the measures we use, peer review and citations, are qualitative and quantitative means respectively of seeing who is good at research. The two measures correlate closely. The California Institute of Technology's highly productive research culture puts it top on citations. But this table includes some surprises, such as the appearance of the University of Alabama, although its score on other measures means that it does not appear in our main table of the world's top 200 universities.

This table is unique in these pages for having no UK entries.

While our peer review shows that the US is the world centre for scholarly esteem, our table of international staff demonstrates beyond doubt that Europe and the Asia-Pacific region are the capitals of academic diversity. No US university appears in our top ten for overseas staff or students.

Our look at international staff contains two universities in London, the LSE and the School of Oriental and African Studies, alma maters of choice for future foreign ministers, central bankers and heads of state across the developing world. Universities in Australia, New Zealand and Switzerland also do well on this measure. But the winner in terms of overseas academics per hectare must be Hong Kong, with three universities here, including the top

institution, Hong Kong University of Science and Technology.

Perhaps even more than top staff, students have become a prized quarry for institutions around the world. For one thing, universities are free to charge them whatever the market will bear. This table shows that students agree that London is a place to spend at least part of their career, with the city claiming three of the four UK entries. The LSE is the winner among students for the second successive year, with second and third slots also going to UK institutions. Its appeal is not hard to discern. Few future economic and social scientists could resist being at a research-based elite university in the heart of one of the world's most diverse and successful cities, close to many of the world's top financial markets.

Second on this measure is Cranfield University, based on a rural campus north of London. Its areas of expertise include technology and business, both magnets for mobile students.

Western Australia, in the shape of Curtin University of Technology, also appears in both lists, as does the Ecole Polytechnique Fédérale in Lausanne, Switzerland, and other universities in Switzerland and France. Swiss institutions have a large nearby catchment area in France, Germany and Austria, which must make it simpler to bring in overseas students. This may allow them to resist the temptation to switch to the English-language teaching that is now sweeping Asian universities.

US universities might argue that Europe has an inbuilt advantage in this measure. Having many small countries within a short drive of each other is bound to facilitate mobility. The presence of Swiss and French universities here might

support this argument, and this is one of the categories in which continental institutions excel. But Soas in London inherently draws its students from around the developing world, and Curtin and RMIT universities appear here despite Australia's distance from other major academic centres.

Students come to university to learn, and the last of our indicators is designed to show whether the institution they arrive at will have anybody for them to learn from. It ranks universities by staff-to-student ratio.

The California Institute of Technology tops this table because it has a tiny student body coexisting with a large and active research-oriented faculty.

But the rest of the data we show suggests that anyone seeking a university where they are going to be well supplied with academic input ought to look beyond the biggest names. Yale and Imperial College London are here from among our overall top table. But so is Ulm University in Germany, despite the poor overall showing of German institutions in these pages.

This is also the only one of six top ten analyses to name a mainland Chinese university, Tsinghua in Beijing. French institutions in Lyon and Paris, which are known more for their teaching than for their research, are also in the top ten here.

Four of this table's top ten — CalTech, Tsinghua, Cranfield and Imperial — are technology-heavy institutions. Such universities may well win out on this measure because class sizes are smaller than in areas such as the humanities.

Despite the success of Yale in this table, this measure is less kind than others to large, general universities such as Harvard and Berkeley. **Martin Ince** ★

“While students and their teachers have been internationally mobile since the Middle Ages, the expectation that academics will spend part of their careers abroad is growing”

### TOP 10 PEER REVIEW

| 2007 rank | 2006 rank | Name                                  | Country | Score |
|-----------|-----------|---------------------------------------|---------|-------|
| 1         | 4         | University of California, Berkeley    | US      | 100   |
| 2         | 3         | Harvard University                    | US      | 100   |
| 3         | 1         | University of Cambridge               | UK      | 100   |
| 4         | 5         | Stanford University                   | US      | 100   |
| 5         | 2         | University of Oxford                  | UK      | 100   |
| 6         | 6         | Massachusetts Institute of Technology | US      | 100   |
| 7         | 13        | Princeton University                  | US      | 100   |
| 8         | 10        | Yale University                       | US      | 100   |
| 9         | 16        | University of Toronto                 | Canada  | 100   |
| 10        | 19        | University of California, Los Angeles | US      | 99.9  |

Source: QS Quacquarelli Symonds

### TOP 10 EMPLOYER REVIEW

| 2007 rank | 2006 rank | Name                                  | Country   | Score |
|-----------|-----------|---------------------------------------|-----------|-------|
| 1         | 6         | University of Cambridge               | UK        | 100   |
| 2         | 8         | University of Oxford                  | UK        | 99.9  |
| 3         | 4         | London School of Economics            | UK        | 99.8  |
| 4         | 1         | Harvard University                    | US        | 99.5  |
| 5         | 31        | University of Manchester              | UK        | 99.0  |
| 6         | 2         | Massachusetts Institute of Technology | US        | 98.9  |
| 7         | 3         | Stanford University                   | US        | 98.9  |
| 8         | 38        | Imperial College London               | UK        | 98.9  |
| 9         | 17        | Università Commerciale Luigi Bocconi  | Italy     | 98.6  |
| 10        | 42        | University of Melbourne               | Australia | 98.5  |

Source: QS Quacquarelli Symonds

### TOP 10 INTERNATIONAL STAFF

| 2007 rank | 2006 rank | Name                                      | Country     | Score |
|-----------|-----------|---|-------------|-------|
| 1         | 11        | Hong Kong University of Science & Technol | Hong Kong   | 100   |
| 2         | 13        | Curtin University of Technology           | Australia   | 100   |
| 3         | 2         | University of Otago                       | NZ          | 100   |
| 4         | 14        | Ecole Polytechnique Fédérale de Lausanne  | Switzerland | 100   |
| 5         | 48        | University of Auckland                    | NZ          | 100   |
| 6         | 5         | University of Hong Kong                   | Hong Kong   | 99.9  |
| 7         | 3         | London School of Economics                | UK          | 99.9  |
| 8         | 4         | ETH Zurich                                | Switzerland | 99.9  |
| 9         | -         | Hong Kong Polytechnic University          | Hong Kong   | 99.9  |
| 10        | 6         | National University of Singapore          | Singapore   | 99.8  |

Source: QS Quacquarelli Symonds

### TOP 10 INTERNATIONAL STUDENTS

| 2007 rank | 2006 rank | Name                                     | Country     | Score |
|-----------|-----------|--|-------------|-------|
| 1         | 1         | London School of Economics               | UK          | 100   |
| 2         | 8         | Cranfield University                     | UK          | 100   |
| 3         | 2         | School of Oriental And African Studies   | UK          | 100   |
| 4         | 13        | Sciences Po Paris                        | France      | 100   |
| 5         | 4         | ESCP-EAP Paris                           | France      | 100   |
| 6         | 3         | Curtin University of Technology          | Australia   | 100   |
| 7         | 6         | RMIT University                          | Australia   | 99.9  |
| 8         | 5         | Ecole Polytechnique Fédérale de Lausanne | Switzerland | 99.9  |
| 9         | 10        | Imperial College London                  | UK          | 99.7  |
| 10        | 9         | University of Geneva                     | Switzerland | 99.5  |

Source: QS Quacquarelli Symonds

### TOP 10 STAFF-TO-STUDENT RATIO

| 2007 rank | 2006 rank | Name                               | Country | Score |
|-----------|-----------|------------------------------------|---------|-------|
| 1         | 26        | California Institute of Technology | US      | 100   |
| 2         | 61        | Ecole Normale Supérieure de Lyon   | France  | 100   |
| 3         | 2         | Yale University                    | US      | 100   |
| 4         | 7         | Tsinghua University                | China   | 100   |
| 5         | 30        | Ecole Polytechnique                | France  | 100   |
| 6         | 55        | Cranfield University               | UK      | 100   |
| 7         | 21        | Universität Ulm                    | Germany | 100   |
| 8         | 4         | University of Rochester            | US      | 99.9  |
| 9         | 5         | Imperial College London            | UK      | 99.9  |
| 10        | 124       | University of Colorado             | US      | 99.9  |

Source: QS Quacquarelli Symonds

### TOP 10 CITATIONS PER STAFF MEMBER

| 2007 rank | 2006 rank | Name                                  | Country     | Score |
|-----------|-----------|---------------------------------------|-------------|-------|
| 1         | 1         | California Institute of Technology    | US          | 100   |
| 2         | 3         | Stanford University                   | US          | 99.9  |
| 3         | 4         | Massachusetts Institute of Technology | US          | 98.4  |
| 4         | 9         | Ecole Normale Supérieure, Paris       | France      | 98.3  |
| 5         | 12        | University of Alabama                 | US          | 98.2  |
| 6         | 10        | Princeton University                  | US          | 96.5  |
| 7         | 2         | Harvard University                    | US          | 95.9  |
| 8         | 13        | Johns Hopkins University              | US          | 95.8  |
| 9         | 112       | University of Zurich                  | Switzerland | 95.4  |
| 10        | 6         | University of California, San Diego   | US          | 95.3  |

Source: QS Quacquarelli Symonds

