

## REF 2014 Special

Power shift Willetts on 'OxCL' – p10

Impact Results and ramifications – p4, 14

Trendsetter The countries considering their own versions of the REF – p18, 19

# Golden triangle pulls ahead in REF shake-out

## UCL and KCL ascend power rankings, Manchester and Leeds fall

**UNIVERSITIES IN LONDON AND** the south-east of England are likely to prosper at the expense of the rest of the UK, according to the results of the first Research Excellence Framework.

The University of Oxford tops the Power Ratings in a league table compiled by *Research Fortnight* to indicate the probable financial consequences of the REF (See *League Table in Full*, pages 8 and 9). University College London has knocked the University of Cambridge out of second place, largely by increasing the number of staff it submitted to the exercise.

The University of Edinburgh has climbed from fifth to fourth, overtaking the University of Manchester. Imperial College London is at number six. King's College London has boosted both the quality and the volume of its research and marched up four places to seventh spot above the Universities of Nottingham, Bristol and Leeds.

The full results of the 2014 REF, published today, reveal that 30 per cent of the research submitted to the exercise was deemed to be "world leading" or 4\* quality and a further 46 per cent was judged to be "internationally excellent" or 3\* quality. The research of more than 52,000 academics from 154 institutions was reviewed in 36 different units of assessment. Three-quarters of universities had at least 10 per cent of their work graded as world leading and the same proportion had almost half their research deemed to be internationally excellent.

**THE RESULTS OF THE REF** are used to allocate almost £2 billion in research funding each year. Public spending cuts expected in 2015 and 2016 will place further pressure on the research budget; in an interview with *Research Fortnight* in November, Greg Clark, the universities and science minister, declined to commit a future Conservative government to maintaining the ring fence that currently protects research funding [RF 12/11/14, p4].

The top six universities in the so-called golden triangle—Oxford, UCL, Cambridge, Imperial, KCL and the London School of Economics and Political Science—

by Miriam Frankel, Alison Goddard and Gretchen Ransow

have done particularly well in the Power Ratings. If present funding weights were maintained, the group's Market Share, as we have called the percentage of quality-related funding in our tables (See *The Method in Our Madness*, page 12), would increase to 26 per cent of the total available, up from 21 per cent in the 2008 Research Assessment Exercise. Any funding cuts would hit them less hard than the rest of the UK.

**MUCH OF THE INCREASE** in our market share measure is at institutions that increased the number of researchers submitted to the exercise. Overall, almost the same number of staff were submitted to the 2014 exercise as in 2008. However the golden-triangle universities increased their staff numbers by 19 per cent to 10,220, the biggest increase of any of the university groups.

As a result, all six institutions are expected to increase their share of the overall research budget by 0.2 percentage points or more (See *table*, page 2). By contrast, the Universities of Manchester, Liverpool, Sheffield, Birmingham and Leeds would see their market share shrink by more than 0.2 percentage points.

Indeed, six of the eight universities in the N8 partnership of northern institutions—Leeds, Liverpool, Manchester, Sheffield, and Lancaster University and Newcastle University—have dropped down the ranking, with only Durham University and the University of York climbing. The group's market share has also declined from 17 per cent of the total in the 2008 RAE to 16 per cent in the REF.

Assuming current funding levels, a group consisting of the remaining Russell Group members and the former 1994 Group of smaller, research-intensive universities would see their market share drop from 48 per cent in 2008 to 46 per cent in 2014. All of the former 1994 Group universities have dropped in the ranking.

*Continued on page 2*

Every new opportunity  
for research funding  
from every sponsor in  
the UK, EU, US & beyond  
Every discipline  
Every fortnight



Edited by Ehsan Masood  
 news@ResearchResearch.com  
 Tel: 020 7216 6500  
 Fax: 020 7216 6501  
 Unit 111, 134-146 Curtain Road, London EC2A 3AR

a **Research** publication

### Golden triangle rising from Cover

Similarly, groups of smaller universities have also lost market share, albeit less markedly. The institutions that now form the University Alliance (replacing the University of Wales Newport in 2008 with the University of South Wales in 2014) could expect to see their market share drop from 5.6 per cent in 2008 to 5.4 per cent in 2014. The market share of the group of universities that now comprise the Million+ group would decline from 1.9 per cent to 1.6 per cent over the same period.

**ALTHOUGH WALES** has the highest Quality Index of the nations, and it is higher than it was in the 2008 exercise, its universities submitted 28 per cent fewer staff.

The majority of universities in Wales have gone down in *Research Fortnight's* power rankings. Universities in Scotland have improved. However, it is not yet known if their position in our table will affect the overall quantum of funding in Scotland and Wales, which is determined through a separate process.

Universities with medical schools are also predicted to fare well in future funding allocations, as are those with science departments. Even if medicine and science were treated in the same way as the social sciences and arts and humanities, they would still take a bigger share of the funding pot. According to our calculations, almost 30 per cent of research funding would be spent on biomedical sciences and more than 25 per cent would go on the physical sciences and engineering. Social sciences would take another 25 per cent, leaving the arts and humanities with less than 20 per cent, based on the quality and volume of research undertaken.

The overall REF scores were determined by the quality of research outputs (65 per cent), impact (20 per cent) and environment (15 per cent). It was the first time that institutions had been asked to demonstrate the impact of their research. The results reveal that the same 10 institutions with the highest Impact Power Ratings also comprise the overall top 10. Likewise, those deter-

mined to have the best Environment Power Ratings—the best places in which to conduct research—were also those that performed best overall.

The quality of research outputs was found to have improved significantly since 2008. Some 22 per cent of research was judged to be of world-leading quality, up from 14 per cent in 2008. Similarly, 50 per cent of research outputs were deemed to be internationally excellent, up from 37 per cent in 2008. Meanwhile, some 44 per cent of submitted impacts were judged to be “outstanding” or 4\* quality, and a further 40 per cent were rated “very considerable” or 3\* quality.

Madeleine Atkins, the chief executive of the Higher Education Funding Council for England, which conducted the REF on behalf of the national funding councils, said in a statement: “UK research has improved from an already strong position. Universities have demonstrated how their excellent research has impacted positively on economic growth, health and social wellbeing, and improved quality of life.

“Continued investment is essential in developing a globally competitive knowledge economy. Shrewd public investment created the capacity required to generate new knowledge in previously unexplored or unexpected fields and the flexibility to respond quickly and effectively to a changing environment.”

Writing in this issue of *Research Fortnight*, former uni-

versities and science minister David Willetts says that REF 2014 can be counted as a success.

He writes: “We can all take pride in the golden triangle—but what about the rest of the country? There are leading research-intensive universities spread across the country, and there is valuable work that may not be 3\* standard but really matters to the local economy and contributes to broadening human understanding.”

Individual universities’ research power ratings and their resulting market share can be seen in our league

*Continued on page 12*

### Diversity of scission

Change in market share of English universities in the Russell and 1994 Groups 2008-14

Institution name	Percentage point change in market share
UCL	2.03%
KCL	0.82%
Oxford	0.82%
Imperial	0.38%
Cambridge	0.36%
Exeter	0.22%
LSE	0.22%
Southampton	0.12%
Nottingham	0.06%
Bristol	0.04%
Queen Mary, London	0.04%
Warwick	0.02%
York	0.00%
Newcastle	-0.01%
Lancaster	-0.01%
Durham	-0.02%
East Anglia	-0.03%
Essex	-0.04%
Birkbeck	-0.04%
SOAS	-0.10%
Sussex	-0.10%
Leicester	-0.12%
Royal Holloway, London	-0.13%
Loughborough	-0.17%
Goldsmiths	-0.17%
Leeds	-0.20%
Birmingham	-0.21%
Sheffield	-0.23%
Liverpool	-0.30%
Manchester	-0.63%

# The turning point

The map of UK research is being redrawn and the golden triangle is winning. No-one knows where it will end, says **William Cullerne Bown**.

The Research Excellence Framework and its predecessor, the Research Assessment Exercise, are 30 years old. They have substantially changed how UK research is done. It has become more competitive, which has increased the pressure on academics and forced them to increase their productivity. It has also forced universities to manage their research enterprise to the point where they look and feel increasingly like corporations.

These are big changes felt by everyone in academia every day. But the one thing the previous exercises left unchanged was the map of research in Britain. Broadly speaking, all the research-intensive universities changed in roughly the same way so that the geography of research remained the same. Until now.

The results of this REF exercise clearly show the beginnings of a shake-out in England in which the golden triangle wins and almost everyone else loses. This is a systemic change to match everything that previous exercises have achieved. The consequences will be profound.

It is hard to say what dynamics have driven the change. There are certainly no answers in the REF data and it is possible that we have to look beyond research funding itself. What we do know is that building up your REF submission requires investment and that every research-intensive university subsidises its research from its own resources. The Universities of Oxford and Cambridge and those in the Ivy League in the United States can find these subsidies from their own assets. Everyone else has to take money from their students.

What has changed since the 2008 exercise is the lifting of quotas on the kind of undergraduate student for which research-intensive universities compete. In this market for ABB+ students, the immediate winners are any universities in London. There is large unfulfilled demand for student places in London thanks in part to decades of policy in which higher education funding has been used as a mechanism to support regional development. In London's case that includes its rise as a world city. In addition, University College London, Imperial College London, the London School of Economics and Political Science and to a lesser extent King's College London have some of the strongest brands around. The upshot is that they know they can recruit more students at will, most likely without dilution of entry grades.

To see how this works in practice, look at UCL's plans for its new campus on the Olympic Park in Stratford. Phase one of UCL East will provide 40,000 to 50,000

square metres of space, of which about half will be dedicated to a faculty for design, an area in which UCL did not even submit to the REF. By the time of the next REF, phase two of UCL East will probably be on the way. Does UCL have to fret over its ability to recruit students for these new design courses? No. Does it have to fret over its ability to find talented staff for the faculty? No. Is expansion in these circumstances difficult? No, even though such huge developments are a financial stretch.

UCL isn't alone. Another 30,000 square metres of biomedical research space is nearing completion at Imperial West at White City, not to mention 70,000 square metres of the Francis Crick Institute in the area around St Pancras that has been renamed the Knowledge Quarter.

The tilt towards London in the REF is not an aberration; it is the start of a trend that is going to accelerate. The undergraduate market allied to the formulaic basis of quality-related funding allows the golden triangle to invest in research with great confidence.

The consequences of the shake-out will be simple. Academic research in England will rapidly become concentrated in the south-east, especially London, which may even eclipse Oxford and Cambridge as the pinnacle of academic life. With one or two exceptions, the rest of the nation will suffer relentless decline.

This is of course in violation of the coalition's promises. Cameron, Osborne, Clegg, Cable, Willetts and now Greg Clark have all promised to rebalance the economy away from London. They have all presided over a policy that, predictably, has had the exact opposite effect.

Politically, it is unsustainable. The understandable howls of the north and middle will be smothered with dollops of cash like those for Manchester's new graphene centres. But this money will be seen as a subsidy for weak institutions; it will never be as much as has been lost systematically and will depend on political whim.

For now, as the coalition does not want to discuss the failure of its tuition fees policy to deliver any savings, all is quiet. The reckoning will come after the election, when the Treasury returns to cutting the budget for the Department for Business, Innovation and Skills. Then the pain for institutions outside the south-east will be ratcheted up another notch.

*Something to add? Email comment@ResearchResearch.com*

'The research concentration is in violation of the coalition's promises.'

## news

# UCL has greatest impact but small institutions make gains

Coventry University and the Universities of Brighton and Portsmouth have been particularly successful in the impact category of the Research Excellence Framework, which counts for 20 per cent of the total score, but it is University College London that takes top impact spot.

The *Research Fortnight* ranking of Impact Power Rating reveals that Portsmouth, Brighton, Coventry and Staffordshire University are each at least eight places higher than in the overall *RF* league table—putting them in 52nd, 54th, 73rd and 107th place respectively (see note below). However, the top 10 institutions for impact are the same as in the league table, apart from UCL knocking Oxford out of first place.

In total, 22 institutions are at least five places higher in our impact ranking than in our league table. Many are small and specialist institutions, and none are in the Russell Group of large, research-intensive universities. Of the Russell Group's members, only the University of York is more than one place higher in the impact ranking than in the league table: it takes 20th place for impact and 24th overall.

A large number of institutions rank lower for impact than overall. The University of Leicester is five places lower for impact and the University of Sussex four places. Northumbria University, Abertay University and the University of Lincoln are all at least nine places lower.

by James Field

jfnews@ResearchResearch.com

Russell Group members occupy every position between first and 24th in our impact ranking, largely because of the number of staff they submitted. But when looking at individual scores, a different picture emerges. For example, 63 per cent of UCL's outputs were rated 4\* for impact: only 12th best, behind Cardiff University (65 per cent, ninth) and Imperial College London (71 per cent, eighth). However, UCL submitted 2,566 full-time-equivalent members of staff to the REF—more than double the number submitted by Imperial.

Similarly, when institutions are ranked by *RF*'s Quality Index for Impact, the top 10 positions are dominated by specialist institutions. The Royal Northern College of Music and the Royal College of Art take first and second place, and the only generalist institutions in the top 10, at sixth and 10th respectively, are Imperial and Cardiff.

Russell Group and University Alliance institutions account for 64 and 5 per cent, respectively, of *RF*'s Impact Market Share, similar to their overall *RF* Market Shares. The Million+ group of post-1992 universities has 1.4 per cent of our Impact Market Share, lower than its overall *RF* Market Share of 1.6 per cent.

You can download our free spreadsheet at [www.research-professional.com/news](http://www.research-professional.com/news) and perform further calculations.

## Environment ranking reflects overall scores

University College London claims the top spot ahead of the University of Oxford in *Research Fortnight*'s ranking of Environment Power Rating, which features the same top 15 institutions as the overall *RF* league table.

Environment counts for 15 per cent of the overall score in the 2014 REF, having counted for between 5 and 45 per cent in 2008. Panels examined the number of research doctoral degrees awarded in each department plus its external research income, including in-kind income. The figures were used to identify the vitality and sustainability of a department's research environment.

In *RF*'s Quality Index for Environment, first place is shared by Scotland's Rural College, now known as SRUC, and the Courtauld Institute of Art. Each submitted only one unit for assessment, which was awarded the top 4\* rating. But because both institutes submitted fewer than 100 researchers, both score lowly in *RF*'s Environment Power Rating list.

Four of the remaining spots in our Quality Index top 10 are taken by specialist institutions: the London School of

by Craig Nicholson

cnnews@ResearchResearch.com

Hygiene and Tropical Medicine (third), the Royal College of Art (seventh), the London School of Economics and Political Science (ninth) and the Royal Veterinary College (10th). The other four spots go to generalist institutions, all based in London and the south-east of England: the University of Cambridge (fourth), Imperial College London (fifth), Oxford (sixth) and UCL (eighth).

UCL tops our Environment Power Rating list because it submitted more researchers for assessment than any other institute. Similarly, Oxford comes second because it submitted the second-highest number.

The Russell Group of research-intensive universities has 69 per cent of *RF*'s Environment Market Share. The University Alliance takes 3.7 per cent, the Million+ group of post-1992 universities 0.8 per cent. This compares with 64 per cent, 5 per cent and 1.6 per cent overall.

You can download our free spreadsheet at [www.research-professional.com/news](http://www.research-professional.com/news) and perform further calculations.

# North loses output power

The Universities of Sheffield and Leeds have fallen out of the top 10 UK institutions based on output power.

In the *Research Fortnight* ranking of Output Power Rating in 2008 they were ranked ninth and 10th respectively, but in 2014 Sheffield has fallen to 13th place and Leeds to 11th (*see note below*). Their places in the top 10 are taken by King's College London, which has shot up to sixth from 13th, and the University of Southampton, which has moved from 15th to 10th.

The University of Oxford is still in first place, but University College London has replaced the University of Cambridge in second place.

The University of Edinburgh has overtaken the University of Manchester to claim fourth spot. Imperial College London is the only institution in the top 10 not to have moved, sticking in seventh place. The University of Nottingham has dropped from sixth to eighth and the University of Bristol has fallen from eighth to ninth.

Overall, the range of scores in the *RF* Output Power Rating for 2014 is far greater than in 2008. In 2008, the top 10 scored between 100 and 54.4. In 2014, the range stretches down to 38.3.

Although Manchester has only dropped one place in the table, its Output Power Rating has crashed by a

by Adam Smith

asnews@ResearchResearch.com

third, from 75.8 to 50.9. Decreases have also been felt at many other institutions, but not those that submitted more than 15 per cent more staff than in 2008—namely UCL and King's. UCL's Output Power Rating has only dropped by seven points; King's has not budged.

Imperial has the highest percentage of 3\* and 4\* research of all the non-specialist institutions. The London School of Economics and Political Science and the University of Warwick are next, followed by Cambridge.

UCL, however, is 33rd in this ranking, losing out to many other research-intensive universities and specialist institutions including Cranfield University, Swansea University and the University of the Arts, London.

At the other end of the scale, the Royal Agricultural University has the lowest proportion of its research classed as 3\* and 4\*. Almost 90 per cent of its research submitted to the REF was graded at the unfunded levels of 2\*, 1\* or unclassified. Some 75 per cent of the research at Writtle College fell into the same category, and the figure was 70 per cent at Falmouth University.

*You can download our free spreadsheet at [www.research-professional.com/news](http://www.research-professional.com/news) and perform further calculations.*

## International REF in 2020 unlikely, says HEFCE

The Higher Education Funding Council for England has said that its proposal to extend the Research Excellence Framework to other countries has received mixed responses.

Speaking to *Research Fortnight*, Steven Hill, HEFCE's head of policy, revealed that an international REF was not likely to take off any time soon, and at least not by 2020.

Hill says that although some submissions to the consultation, which closed on 12 November, were positive about the idea, others expressed concern and highlighted challenges, such as the potential cost and difficulty of translating an evaluation system into a different research environment.

But, by a narrow majority, respondents from universities were in favour of HEFCE doing some further work to explore the idea. The council is in the process of making a recommendation, based on the consultation, to science minister Greg Clark. Hill says that a "likely next step will be to consider how we can develop some models and get views on them, or possibly even do some pilot exercises".

HEFCE has also discovered an appetite for the project abroad, and has spoken to organisations in Australia and Hong Kong, as well as the OECD and the International Council for Science. "Some were more interested in

by Miriam Frankel

mfnews@ResearchResearch.com

taking part and some were more interested in a consultancy. Others were interested in benchmarking national systems against each other," says Hill. He adds that he could also imagine individual universities in the United States and Sweden being interested in taking part.

Diana Hicks, a professor of social policy at the Georgia Institute of Technology in the US calls the plan "really interesting", but says most US universities would probably not be interested as they don't aspire to be like British universities. "For my own university, Imperial College London would be an interesting comparison, but most British universities wouldn't be."

Paul Wellings, the vice-chancellor of the University of Wollongong in Australia, is not optimistic. "The REF is a game in two parts: transparent peer evaluation by many discipline committees and opaque resource allocation (after the event) by a small team of technocrats," he says. "Quite appropriately, the research policy and equity policy environments driving both bits are subject to ministerial direction in London. I cannot imagine why anyone sitting outside the UK would wish to hand over their data to be assessed through the policy lens of another country."

## REF in the nations

# Scotland boosts power ratings

The results of the 2014 Research Excellence Framework reveal that the majority of Scotland's universities have gone up in the *Research Fortnight* power ratings, compared with 2008, despite submitting 2.8 per cent fewer researchers.

Wales, where a number of university mergers have taken place since 2008, submitted 28 per cent fewer staff to the REF than it did to the RAE: 1,855 rather than 2,578.

In general, the top five institutions in Scotland based on the *RF* Power Rating remain the same as in 2008: the Universities of Edinburgh, Glasgow, St Andrews, Strathclyde and Aberdeen. Of these, Edinburgh, Glasgow and Strathclyde have risen by one place in the Power Rating list to fourth, 13th and 30th place respectively. St Andrews has risen by three points to 29th. But not all Scottish institutions have been so successful. Aberdeen has fallen by two places to 31st, and Robert Gordon University has fallen by 23 places to 105th. The Glasgow School of Art has also fallen, from 95th in 2008 to 110th in 2014.

Both Strathclyde and Aberdeen rank higher on *RF*'s Impact Power Rating list than on the overall *RF* league table. Strathclyde ranks 30th overall and 27th for impact; Aberdeen 31st overall and 29th for impact. There is a significant discrepancy at Abertay University: it is ranked 123rd overall but is the lowest-placed Scottish university for impact, at 133rd. This is despite the fact that Abertay is often held up as an example of a university with deep links to its local economy—and especially to the region's computer gaming companies.

In England, a number of elite universities in London and Oxbridge are pulling further ahead of other institutions, with University College London, King's College London and the University of Oxford boosting their *RF* Market Share by between 0.82 and 2 percentage points each. This pattern is not replicated on a similar scale in

by Adam Smith with James Field and Craig Nicholson

Scotland. Although Edinburgh's market share has grown by 0.42 percentage points, the share of another big university, Glasgow, has grown by the same amount as that of the much smaller University of the West of Scotland: 0.02 percentage points.

The market shares of the Universities of Stirling and Strathclyde have both grown by 0.04 percentage points, while St Andrews' share has risen by 0.07 percentage points and Heriot-Watt University's by 0.06 percentage points. The University of Dundee's share, on the other hand, has fallen by 0.15 percentage points and Edinburgh Napier University's has fallen by 0.10 percentage points.

In Wales, Cardiff University has dropped one place to 17th in our Power Rating list and has lost 0.33 percentage points of its *RF* Market Share. Swansea University has dropped three places to 40th, and Aberystwyth University and Bangor University have climbed by two places and one place respectively. Wales has significantly boosted its performance in the *RF* Quality Index, ranking highest of all the nations. Its score of 46.4 beats England's 45.5, Scotland's 45 and Northern Ireland's 41.1. In 2008, Wales came last with 43.7 for quality, behind the other nations' scores of 47.9, 44.8 and 44.8 respectively.

In our Impact Power Rating list, six of the nine Welsh universities rank within one place of their position in our overall league table. Glyndwr University and Cardiff Metropolitan University rank two and three places lower on impact than overall, respectively, and the University of Wales Trinity St David ranks two places higher.

In Northern Ireland, Queen's University Belfast is still top and has risen from 21st to 19th in the overall *RF* league table. It is followed by Ulster University and Stranmillis University College in second and third place.

### Disunited kingdom

Rankings per nation, including staff numbers

Nation	Power rating	Quality index	4*	3*	2*	1*	Unclassified	Staff FTE	
								2014	% change 2008-14
England	100	45.5	30.3	45.7	20.1	3.2	0.6	42,491	1.24%
Scotland	14.9	45.0	29.2	47.5	20.1	2.8	0.4	6,390	-2.81%
Wales	4.4	46.4	30.7	47.0	19.3	2.6	0.4	1,855	-28.04%
Northern Ireland	2.8	41.1	24.4	50.2	22.4	2.6	0.5	1,325	5.41%

**CORRECTION** In our articles on pages 2 and 6 of the Research Excellence Framework Special issue [RE 4007 18/12/14] we indicated how national funding for Wales and Scotland would change in the light of the results of the REF. Readers have reminded us that budgets for the devolved funding councils are set through a separate process. We are happy to correct the record and have amended both articles accordingly.



# Two cultures: How results differ across subject panels

The results of the Research Excellence Framework differ across the four main disciplinary panels under which the 36 units of assessment are grouped.

Some 13,600 full-time-equivalent staff members had their work submitted to panel A, which covers subjects ranging from clinical medicine to agriculture and veterinary science, and the quality of research was highest in this category. This strong performance suggests that the biomedical sciences could expect to get almost 30 per cent of the total research funding pot, assuming that the physical sciences, engineering and medicine are treated in the same way as the social sciences and arts and humanities. Universities with medical schools thus stand to do well in future funding.

In *Research Fortnight's* Power Rating list for panel A, the five top-performing institutions are University College London, the University of Oxford, King's College London, the University of Cambridge and the University of Edinburgh.

The REF assesses research by assigning a 65 per cent weight to research outputs, a 20 per cent weight to impact and a 15 per cent weight to the environment in which the research is conducted. The top five institutions for panel A on our Outputs Power Rating list almost match those on the overall Power Rating, but Imperial College London replaces Edinburgh. The top five institutions for panel A in our Impact Power Rating list are UCL, Oxford, King's, Imperial and Edinburgh. The top five for the panel in our Environment Power Rating are the same as those in our overall Power Rating.

In other respects, our overall Power Rating list for panel A closely resembles the overall *RF* league table. Only the University of Glasgow, which is 13th overall, has managed to disturb the top 10 in panel A, displacing the University of Leeds from our league table.

The physical sciences and engineering are also poised to prosper from the results. Some 13,350 full-time-equivalent researchers were submitted to panel B, which covers the physical sciences and engineering. The quality of the research they conducted was also found to be high, albeit not quite as good as that of the biologists and medics. The physical sciences could thus expect to get more than 25 per cent of research funding, assuming again that the physical sciences, engineering and medicine are treated in the same way as the social sciences and arts and humanities.

Size and quality go hand in hand. In our Output Power Rating for panel B, Cambridge comes top followed by Imperial, Oxford, the University of Southampton and

by **Gretchen Ransow**

[news@ResearchResearch.com](mailto:news@ResearchResearch.com)

UCL. The University of Warwick and the University of Nottingham make their way into the top 10 at ninth and 10th, up from 12th and 11th respectively in 2008 and edging out the University of Leeds and the University of Sheffield.

The top five institutions for panel B in our Outputs Power Rating list are Cambridge, Oxford, Imperial, UCL and Southampton. Our panel B winners for Impact Power Rating are Imperial, Cambridge, Oxford, Southampton and the University of Manchester. Cambridge, Imperial, Oxford, Southampton and UCL top the Environment Power Rating for panel B.

The social sciences were the most populous discipline: some 14,400 full-time-equivalent researchers were submitted to panel C. However, the quality of work, in subjects from architecture and planning to law, was deemed to be the lowest of the four main panels. As a result it is expected to take no more than a quarter of the available quality-related research funding.

The London School of Economics and Political Science has retained its dominance in panel C. It is third in our overall Power Rating list for the social sciences, far above its position of 27th in our overall league table. And in our Quality Index, it comes out on top. The London Business School comes second, and only fails to make the top 10 of our overall Power Rating list because it submitted only 99 staff. This puts it at 55th overall for staff submitted for evaluation. UCL has powered to the top of the Overall Power Rating list once again, jumping seven places from 2008, and King's has vaulted 22 places to appear in the top 10.

Just over 10,000 full-time-equivalent researchers were submitted to panel D, which covers arts and humanities ranging from history to music, drama, dance and the performing arts. Here the quality of the research was in third place; the subjects can expect to share less than 20 per cent of the funding.

In terms of our Overall Power Rating, the five top-performing institutions for panel D are Oxford, Cambridge, Edinburgh, King's and UCL.

Researchers working in the humanities were perhaps the most anxious in terms of demonstrating impact. Oxford, Cambridge, King's, Edinburgh and UCL all demonstrated high Impact Power Rating in the arts and humanities. The environmental powerhouses in these disciplines are Oxford, Cambridge, Edinburgh, Leeds and King's.

**Research Fortnight league table in full...**

See page 12 for definitions and methodologies

Institutions ranked by power rating

Rank	2008 Rank	Institution name	UoAs submitted	Power rating	FTE staff submitted	Quality index	Market share	Percentage point change in market share	% of submissions with each grade				
									4*	3*	2*	1*	Unclassified
1	1	Oxford	31	100	2,409	61.1	6.24%	0.82%	48.1	39.1	11.4	1.2	0.2
2	3	UCL	36	97.3	2,566	55.8	6.07%	2.03%	42.6	39.5	15.4	1.9	0.6
3	2	Cambridge	32	85.5	2,088	60.3	5.33%	0.36%	46.8	40.4	11.5	0.9	0.3
4	5	Edinburgh	31	62.6	1,753	52.6	3.91%	0.42%	37.6	44.9	15.5	1.7	0.3
5	4	Manchester	35	54.1	1,561	51.0	3.38%	-0.63%	35.3	47.3	15.7	1.4	0.4
6	6	Imperial	14	52.2	1,257	61.1	3.26%	0.38%	46.4	44.2	8.6	0.7	0.0
7	11	KCL	27	51.3	1,369	55.2	3.20%	0.82%	40.2	45.0	13.0	1.5	0.3
8	7	Nottingham	32	45.6	1,404	47.8	2.84%	0.06%	31.6	48.6	17.4	1.7	0.7
9	10	Bristol	31	40.0	1,138	51.8	2.50%	0.04%	36.0	47.3	15.1	1.4	0.2
10	8	Leeds	33	38.4	1,149	49.2	2.39%	-0.20%	32.4	50.4	15.4	1.7	0.1
11	13	Southampton	26	37.8	1,113	50.0	2.36%	0.12%	32.9	51.4	14.0	1.3	0.4
12	9	Sheffield	35	35.9	1,043	50.7	2.24%	-0.23%	33.3	52.2	13.1	1.3	0.1
13	14	Glasgow	32	35.6	1,099	47.6	2.22%	0.02%	30.9	50.2	16.8	1.8	0.3
14	15	Warwick	23	33.8	931	53.4	2.11%	0.02%	36.9	49.7	12.3	1.0	0.1
15	12	Birmingham	33	33.3	1,065	46.0	2.08%	-0.21%	28.3	53.2	16.3	1.8	0.5
16	17	Newcastle	28	28.5	888	47.3	1.78%	-0.01%	31.4	47.7	19.3	1.3	0.3
17	16	Cardiff	27	28.1	738	56.1	1.75%	-0.33%	40.5	46.9	11.5	0.9	0.2
18	19	Durham	23	24.9	740	49.5	1.55%	-0.02%	32.6	50.5	15.3	1.1	0.4
19	21	Queen's Belfast	28	24.7	868	41.9	1.54%	0.12%	24.6	51.9	21.4	1.8	0.3
20	20	Queen Mary, London	21	23.4	671	51.4	1.46%	0.04%	34.1	51.9	12.6	1.0	0.5
21	25	Exeter	25	23.3	736	46.5	1.45%	0.22%	29.0	52.5	16.2	2.0	0.3
22	18	Liverpool	26	23.2	760	45.0	1.45%	-0.30%	27.1	53.6	17.7	1.5	0.1
23	27	LSE	14	22.5	532	62.3	1.41%	0.22%	49.9	37.4	11.0	1.2	0.6
24	22	York	24	22.4	643	51.3	1.40%	0.00%	35.3	48.0	15.1	1.3	0.2
25	24	Lancaster	16	19.9	580	50.6	1.24%	-0.01%	34.8	47.5	15.5	1.9	0.3
26	23	Loughborough	18	18.0	646	41.1	1.12%	-0.17%	24.6	49.4	22.7	3.1	0.2
27	26	Leicester	25	17.6	672	38.6	1.10%	-0.12%	20.3	55.1	21.9	2.3	0.4
28	28	Reading	23	17.6	590	43.8	1.10%	-0.04%	26.7	51.3	20.1	1.8	0.1
29	32	St Andrews	20	17.3	519	49.0	1.08%	0.07%	32.4	49.8	16.4	1.2	0.1
30	31	Strathclyde	17	17.0	558	44.8	1.06%	0.04%	27.8	51.1	18.7	2.0	0.4
31	29	Aberdeen	25	16.7	597	41.1	1.04%	-0.05%	23.9	51.7	21.7	2.3	0.3
32	40	Kent	23	16.6	591	41.2	1.03%	0.20%	25.2	48.1	23.7	2.7	0.3
33	33	Bath	13	15.8	462	50.5	0.99%	0.03%	32.3	54.6	11.3	1.4	0.3
34	30	Sussex	24	14.9	501	43.7	0.93%	-0.10%	27.5	48.5	21.5	2.0	0.5
35	34	East Anglia	24	14.7	455	47.7	0.92%	-0.03%	30.2	52.4	16.0	1.0	0.4
36	41	Surrey	15	12.6	459	40.6	0.79%	-0.01%	21.8	56.4	19.9	1.8	0.1
37	35	Dundee	20	12.3	396	45.9	0.77%	-0.15%	31.1	44.4	21.2	2.9	0.4
38	38	Ulster	20	12.2	449	40.0	0.76%	-0.09%	24.2	47.5	24.3	3.4	0.7
39	36	Royal Holloway, London	17	12.1	378	47.0	0.75%	-0.13%	30.0	50.9	17.3	1.4	0.4
40	37	Swansea	18	11.9	370	47.5	0.74%	-0.13%	31.1	49.2	18.0	1.6	0.2
41	39	Brunel	21	11.7	577	29.9	0.73%	-0.11%	14.3	46.9	31.5	6.4	0.9
42	53	London School of Hygiene & TM	2	11.6	314	54.7	0.73%	0.22%	42.5	36.6	19.7	1.0	0.2
43	47	Heriot-Watt	12	10.7	352	44.9	0.67%	0.06%	26.4	55.6	15.9	1.9	0.3
44	43	Essex	14	10.5	339	45.5	0.65%	-0.04%	29.6	47.8	20.7	1.8	0.1
45	45	City	12	10.5	378	40.8	0.65%	0.02%	23.3	52.4	20.9	2.6	0.8
46	42	Open	18	10.2	396	37.9	0.64%	-0.15%	20.8	51.4	25.7	1.9	0.2
47	46	Birkbeck	14	9.49	328	42.6	0.59%	-0.04%	27.4	45.7	23.4	3.1	0.4
48	54	Stirling	15	8.43	301	41.3	0.53%	0.04%	25.1	48.5	23.9	2.5	0.0
49	51	Aberystwyth	17	7.99	317	37.1	0.50%	-0.04%	22.0	45.4	28.3	3.5	0.8
50	50	Plymouth	18	7.83	366	31.5	0.49%	-0.06%	14.7	50.4	30.1	3.5	1.4
51	44	Hull	16	7.24	355	30.0	0.45%	-0.19%	14.2	47.4	33.0	5.1	0.3
52	81	Northumbria	16	7.24	343	31.1	0.45%	0.23%	16.4	44.0	33.9	5.6	0.1
53	57	Keele	17	6.81	267	37.5	0.42%	-0.06%	20.9	50.1	25.8	2.7	0.6
54	63	Cranfield	3	6.78	224	44.6	0.42%	0.00%	26.6	54.2	18.8	0.5	0.0
55	56	Bangor	14	6.77	233	42.8	0.42%	-0.06%	25.7	51.2	20.0	2.5	0.5
56	55	Manchester Met	13	6.72	313	31.6	0.42%	-0.07%	14.9	50.1	30.0	4.3	0.6
57	49	Goldsmiths	13	6.36	238	39.3	0.40%	-0.17%	23.9	46.1	26.9	2.4	0.7
58	60	West of England	17	6.21	299	30.5	0.39%	-0.06%	15.4	45.6	33.0	5.7	0.4
59	64	Aston	7	6.13	199	45.2	0.38%	-0.02%	28.8	49.4	20.2	1.4	0.3
60	68	Portsmouth	15	6.10	282	31.9	0.38%	0.04%	15.8	48.3	31.7	3.8	0.4
61	58	SOAS	11	5.87	234	36.9	0.37%	-0.10%	22.6	43.1	28.5	5.0	0.8
62	76	Liverpool John Moores	17	5.58	243	33.9	0.35%	0.08%	17.6	48.8	29.4	3.3	0.9
63	62	Brighton	10	5.36	209	37.6	0.33%	-0.09%	22.8	44.5	27.3	4.6	0.7
64	70	Oxford Brookes	17	5.35	269	29.2	0.33%	0.01%	14.3	44.8	34.5	5.7	0.6
65	66	Sheffield Hallam	11	5.15	226	33.5	0.32%	-0.06%	17.9	47.0	29.3	5.4	0.5
66	75	Middlesex	10	5.08	272	27.5	0.32%	0.05%	12.3	45.7	32.1	8.1	1.8
67	69	Westminster	13	4.82	210	33.8	0.30%	-0.04%	19.6	42.7	30.4	6.5	0.8
68	67	Nottingham Trent	16	4.68	246	28.0	0.29%	-0.08%	14.5	40.7	35.2	8.3	1.3
69	97	Huddersfield	13	4.63	234	29.2	0.29%	0.15%	14.6	43.7	34.6	6.2	0.9
70	78	Institute of Cancer Research	2	4.47	103	63.9	0.28%	0.02%	50.0	41.7	7.7	0.0	0.7
71	65	De Montfort	12	4.43	218	29.9	0.28%	-0.10%	16.1	41.5	36.7	5.1	0.7
72	73	London Business School	1	4.34	99	64.7	0.27%	0.00%	56.0	26.0	12.0	3.0	3.0
73	48	Salford	13	4.09	242	24.8	0.25%	-0.33%	10.6	42.7	38.2	6.9	1.6
74	71	Central Lancashire	16	3.81	247	22.7	0.24%	-0.05%	8.5	42.6	40.8	7.4	0.6
75	80	Roehampton	13	3.71	149	36.6	0.23%	-0.01%	22.0	44.1	28.9	4.9	0.2
76	59	Arts, London	1	3.60	110	48.3	0.22%	-0.23%	31.0	52.0	15.0	2.0	0.0
77	89	Royal Vet College	1	3.49	103	49.7	0.22%	0.04%	35.0	44.0	18.0	3.0	0.0



See page 12 for definitions and methodologies

Rank	2008 Rank	Institution name	UoAs submitted	Power rating	FTE staff submitted	Quality index	Market share	Percentage point change in market share	% of submissions with each grade				
									4*	3*	2*	1*	Unclassified
78	77	Hertfordshire	13	3.44	192	26.5	0.21%	-0.05%	11.0	46.2	36.0	5.9	0.8
79	61	Bradford	7	3.43	124	40.8	0.21%	-0.24%	24.0	50.5	22.4	2.4	0.7
80	92	Bournemouth	8	3.40	162	30.9	0.21%	0.05%	16.5	43.4	35.8	4.1	0.3
81	90	Lincoln	17	3.17	177	26.3	0.20%	0.03%	13.0	40.0	36.8	8.3	1.9
82	94	Coventry	9	3.11	153	30.0	0.19%	0.04%	14.5	46.5	31.3	7.5	0.2
83	86	Glasgow Caledonian	9	2.98	153	28.7	0.19%	0.00%	12.6	48.3	33.3	5.4	0.4
84	74	Kingston	9	2.90	139	30.8	0.18%	-0.09%	16.3	43.6	34.7	5.0	0.4
85	91	East London	13	2.76	129	31.4	0.17%	0.00%	16.5	44.8	32.0	6.3	0.4
86	108	Bedfordshire	11	2.68	153	25.8	0.17%	0.09%	14.1	35.2	40.4	9.3	1.0
87	83	Greenwich	19	2.67	202	19.5	0.17%	-0.04%	8.5	33.0	43.1	13.4	2.0
88	96	Birmingham City	11	2.52	122	30.4	0.16%	0.02%	15.7	44.0	30.5	8.5	1.3
89	93	Leeds Beckett	11	2.34	201	17.1	0.15%	-0.01%	8.4	26.1	41.5	20.9	3.1
90	103	Anglia Ruskin	15	2.26	168	19.7	0.14%	0.05%	7.2	37.7	41.4	11.9	1.8
91	87	Wolverhampton	13	2.21	170	19.2	0.14%	-0.05%	8.2	32.9	43.9	11.9	3.1
92	n/a	SRUC	1	2.05	57	52.7	0.13%	n/a	42.0	32.0	23.0	3.0	0.0
93	99	Royal College of Art	1	2.04	60	50.3	0.13%	0.00%	37.0	40.0	17.0	6.0	0.0
94	79	South Wales	12	1.96	117	24.6	0.12%	-0.03%	11.8	38.5	39.8	8.5	1.4
95	109	Canterbury Christ Church	10	1.84	137	19.8	0.11%	0.03%	6.7	39.1	41.3	11.6	1.3
96	122	Edge Hill	12	1.70	139	18.1	0.11%	0.06%	7.2	32.7	39.2	17.4	3.6
97	85	Edinburgh Napier	9	1.63	99	24.3	0.10%	-0.10%	9.8	43.6	37.6	7.2	1.8
98	88	St. George's, London	2	1.63	56	43.1	0.10%	-0.08%	29.6	40.3	29.6	0.4	0.0
99	98	London South Bank	7	1.53	102	22.1	0.10%	-0.03%	6.1	48.2	38.1	7.0	0.7
100	112	West of Scotland	9	1.52	118	19.0	0.10%	0.02%	6.5	37.5	42.8	12.2	1.0
101	115	Courtauld Institute of Art	1	1.52	33	69.0	0.10%	0.03%	56.0	39.0	4.0	0.0	1.0
102	104	Teesside	8	1.50	87	25.3	0.09%	0.00%	8.8	49.6	33.1	7.6	1.0
103	84	Sunderland	13	1.49	147	14.9	0.09%	-0.11%	6.1	26.5	44.0	20.6	2.8
104	106	Highlands and Islands	6	1.46	68	31.5	0.09%	0.01%	12.8	56.2	26.2	3.9	0.9
105	82	Robert Gordon	9	1.34	102	19.4	0.08%	-0.14%	7.7	35.0	42.7	13.8	0.8
106	107	Bath Spa	6	1.33	74	26.5	0.08%	0.00%	13.1	40.0	34.3	11.0	1.6
107	117	Chester	16	1.31	138	13.9	0.08%	0.02%	5.5	25.3	44.0	21.7	3.5
108	72	London Met	12	1.31	80	24.0	0.08%	-0.20%	11.1	38.6	35.3	13.2	1.8
109	124	Liverpool Hope	12	1.28	112	16.8	0.08%	0.03%	6.8	30.0	41.8	19.9	1.5
110	95	Glasgow School of Art	1	1.28	53	35.7	0.08%	-0.06%	23.0	38.0	31.0	8.0	0.0
111	n/a	Liverpool Sch Tropical Medicine	2	1.13	35	47.4	0.07%	n/a	31.1	48.9	19.0	1.0	0.0
112	101	Cardiff Met	3	1.02	35	42.7	0.06%	-0.06%	24.5	54.6	18.3	1.9	0.7
113	145	Worcester	11	1.00	105	14.1	0.06%	0.04%	4.7	28.1	40.9	22.8	3.6
114	123	Derby	10	0.98	107	13.5	0.06%	0.01%	5.4	24.5	44.6	22.7	2.8
115	113	Winchester	8	0.97	73	19.7	0.06%	0.01%	7.8	35.5	38.9	15.8	1.9
116	116	Staffordshire	8	0.91	81	16.5	0.06%	0.00%	6.4	30.3	41.0	21.2	1.1
117	126	Chichester	5	0.91	52	25.8	0.06%	0.02%	14.9	32.6	42.1	8.6	1.8
118	114	Queen Margaret, Edinburgh	5	0.86	43	29.5	0.05%	-0.02%	15.5	42.1	34.5	8.0	0.0
119	111	Northampton	9	0.82	94	12.9	0.05%	-0.03%	4.1	26.4	47.3	19.0	3.2
120	105	Gloucestershire	6	0.81	56	21.2	0.05%	-0.04%	9.7	34.4	40.1	15.4	0.4
121	141	R Cent Sch of Speech & Drama	1	0.71	21	49.3	0.04%	0.02%	39.0	31.0	25.0	4.0	1.0
122	131	York St John	9	0.66	68	14.3	0.04%	0.01%	6.3	23.8	42.9	21.1	5.9
123	118	Abertay Dundee	7	0.64	67	14.2	0.04%	-0.02%	5.1	27.3	49.9	13.8	3.9
124	127	Institute of Zoology	1	0.63	21	44.7	0.04%	0.00%	22.0	68.0	10.0	0.0	0.0
125	110	Wales, Trinity St David	6	0.61	40	22.2	0.04%	0.01%	10.6	34.9	39.8	12.6	2.0
126	130	St Mary's, Twickenham	7	0.52	45	17.2	0.03%	0.00%	10.9	18.9	33.0	32.1	5.0
127	134	Falmouth	2	0.48	50	14.2	0.03%	0.01%	7.2	21.0	48.4	15.9	7.5
128	119	Bolton	7	0.48	49	14.3	0.03%	-0.02%	5.6	26.2	41.0	20.8	6.4
129	120	Creative Arts	1	0.46	21	32.7	0.03%	-0.02%	17.0	47.0	29.0	5.0	2.0
130	129	Royal College Music	1	0.46	14	47.0	0.03%	0.00%	34.0	39.0	22.0	4.0	1.0
131	144	Royal Conservatoire of Scotland	1	0.40	15	39.7	0.02%	0.00%	26.0	41.0	26.0	6.0	1.0
132	146	Heythrop College	1	0.38	16	35.3	0.02%	0.00%	22.0	40.0	36.0	2.0	0.0
133	140	Royal Northern College of Music	1	0.36	11	49.0	0.02%	0.00%	36.0	39.0	22.0	3.0	0.0
134	143	Guildhall Sch of Music & Drama	1	0.34	16	31.0	0.02%	0.00%	21.0	30.0	31.0	8.0	10.0
135	128	Wales	1	0.33	12	39.0	0.02%	n/a	26.0	39.0	29.0	6.0	0.0
136	132	Royal Academy of Music	1	0.32	14	34.3	0.02%	-0.01%	21.0	40.0	34.0	3.0	2.0
137	136	Glyndwr	4	0.32	34	13.9	0.02%	-0.01%	3.0	32.7	41.8	21.5	1.0
138	142	Harper Adams	1	0.29	17	25.3	0.02%	0.00%	10.0	46.0	44.0	0.0	0.0
139	121	West London	5	0.29	36	11.8	0.02%	-0.03%	5.2	19.8	38.3	35.3	1.4
140	138	Buckinghamshire New	4	0.28	24	17.2	0.02%	0.00%	7.0	30.6	41.3	16.9	4.2
141	n/a	Trinity Laban	1	0.27	12	34.7	0.02%	0.00%	18.0	50.0	24.0	8.0	0.0
142	133	Cumbria	6	0.26	27	14.0	0.02%	-0.01%	6.4	22.7	49.3	20.8	0.8
143	154	Newman	6	0.22	23	13.8	0.01%	0.00%	5.0	26.5	48.1	17.7	2.7
144	137	Southampton Solent	4	0.19	36	7.9	0.01%	-0.02%	2.1	17.5	36.6	28.9	15.0
145	147	Leeds Trinity	5	0.16	20	11.6	0.01%	-0.01%	4.6	21.1	50.6	18.0	5.8
146	148	Norwich University of the Arts	1	0.16	7	31.0	0.01%	0.00%	19.0	36.0	40.0	5.0	0.0
147	158	Arts Bournemouth	1	0.16	12	19.0	0.01%	0.01%	7.0	36.0	38.0	18.0	1.0
148	155	Stranmillis University College	1	0.10	5	28.0	0.01%	0.00%	20.0	24.0	28.0	28.0	0.0
149	156	Bishop Grosseteste	3	0.09	11	12.2	0.01%	0.01%	6.4	17.6	45.6	26.8	3.5
150	151	Rose Bruford	1	0.08	6	21.0	0.01%	0.00%	7.0	42.0	30.0	15.0	6.0
151	n/a	Writtle	2	0.05	12	5.7	0.00%	n/a	0.0	17.1	24.4	28.6	30.0
152	152	Royal Agricultural	1	0.04	12	4.3	0.00%	-0.01%	3.0	4.0	39.0	38.0	16.0
153	157	London Institute in Paris	1	0.01	3	7.3	0.00%	0.00%	0.0	22.0	25.0	38.0	15.0
154	n/a	St Mary's University College	1	0.00	3	0.0	0.00%	n/a	0.0	0.0	20.0	67.0	13.0

**view from the top** david willetts

# Make assessment more inclusive

REF 2014 can be counted a success. But the next such exercise needs better ways to recognise the value of cooperation and local impact, says **David Willetts**.

They say the Research Excellence Framework is the closest that academia gets to a general election. At last the wait for the numbers is over and we can begin digesting the results. A first assessment suggests some strong themes.

The rise of London is striking, with its universities and colleges doing ever better. As a visiting professor at King's College London, I am particularly pleased with its performance. Together with University College London and Imperial College London, King's is joining Oxbridge in the global elite of great universities. The golden triangle looks even more golden.

Impact assessment has not disrupted the overall judgements. What it has done, though, is encourage academics to look beyond articles in peer-reviewed journals, to see how the world is better for their work.

The humanities, where anxieties about impact were most acute, have proved as effective in this regard as any other discipline—perhaps even more so, because an exhibition or a production of a play that has been influenced by your work makes for wonderfully clear evidence. The big civics, with theatres and businesses on their doorsteps, may have found it easier to show impact than universities on out-of-town campuses.

Was it worth all the effort? Undoubtedly. This type of exercise, going back to the mid-1980s, is one of the main reasons why British science is so much more productive than that of any other major western country. We are unique among the medium-sized countries for achieving global excellence across such a wide range of disciplines.

The frustration is that the UK is not always as good at working across those disciplines as it could be. The REF, with its focus on the lead principal investigator in the lead institution and its structure of discipline-based panels, does not help here.

Next time, cross-disciplinary working will need greater recognition. The exercise also needs to handle partnerships between institutions better, as so much good-quality research is a team effort. The model of atomistic, individualised competition behind the REF needs to be modified to reflect the value of cooperation.

Submitting and assessing the work has absorbed a lot of time. But there has to be a transparent and fair allocation of well over £10 billion of public money; a decision over dinner at the Athenaeum won't quite do.

Our unusual dual-funding model also brings diversity, and I would not wish to shift solely to funding through the research councils. That leaves metrics as one possible route to simpler assessments, which is why I asked James Wilsdon of the University of Sussex to lead a review to see whether the world had advanced much since the rather cack-handed attempt at introducing metrics into the last Research Assessment Exercise. Any shift to metrics would need the consent of academics, which may be forthcoming in at least some disciplines.

The Higher Education Funding Council for England will turn quickly to the next exercise and has already commissioned studies to learn lessons from REF 2014. For example, my colleagues in the policy institute at King's are analysing impact case studies, and their costs and benefits to universities. These studies and others will report in the spring, after which our focus should be on refining and reforming the next REF for 2020.

But perhaps the biggest issue opened up by these results is the significance of place. We can all take pride in the golden triangle—but what about the rest of the country? There are leading research-intensive universities spread across the country, and there is valuable work that may not necessarily be 3\* standard but really matters to the local economy and contributes to broadening human understanding.

I think of the University of Portsmouth's analysis of the effectiveness of welfare-to-work programmes; of a conversation with senior executives from Boeing, who wanted to visit the University of Sheffield to learn how the best university-business research links worked. Recent reports by Andrew Witty and by Jim O'Neill have challenged us to do more to recognise and support these city and regional clusters.

There are understandable concerns about overloading the limited science budget with policy objectives—it has to focus above all on peer-reviewed excellence. Other sorts of initiatives may not come out at the top of the REF. But there needs to be a way to recognise them, perhaps through a separate budget line. My excellent successor, Greg Clark, with his understanding of local growth and city deals, is the right man to grasp this issue.

*More to say? Email comment@ResearchResearch.com*

*David Willetts is a visiting professor at King's College London and was minister for universities and science from 2010 to 2014.*

'There is work that may not be 3\* but really matters to the local economy.'

# A very bibliometric Christmas

Along with the usual overeating and overdrinking, this Christmas will feature the oversight of research. So to coincide with the results of the Research Excellence Framework, three wizened men count down a dozen seasonally themed issues related to the use of metrics in research assessment.

12. Why is the drumbeat of citations so insistent? Citations are the sound of academic attention. But commercial databases select some journals and ignore the rest. In some fields, particularly in applied research, the resulting loss of information is significant.

11. The pipers are out of tune. The danger of bibliometrics is that journal papers become markers of prestige rather than sources of knowledge. A fixation on publication analysis is disrupting research culture, as shown by the disappearance of conference proceedings from the 2008 Research Assessment Exercise and the submission to the REF of almost every *Nature* paper published by UK researchers. Making citation counts and impact factors overstretched proxies for research performance compromises research management.

10. A wise lord looks before he leaps. The REF has one journal article category, but the sources of citation counts, such as CrossRef, Google Scholar and Scopus, track different documents, and journals carry editorials and conference proceedings as well as articles. The types of document on your publication list might not be those measured by the source of your citation data.

9. Every lady dances to her own rhythm. All research depends on its subject, time and location. You can't compare physics directly with ecology, because citation rates vary, nor 2014 with 2008, because recent papers have had less time to be cited. Molecular biology papers burn brightly but briefly; maths papers gain citations at a glacial pace for decades. Even differences between places—between, say, the balances of theoretical and experimental work in different physics departments—may hinder direct comparison.

8. Citations: full-fat or semi-skimmed? Context is everything. Highly cited work may describe a great method, not a discovery; negative citations point not to rubbish, which is never cited, but to controversy or supposed error. So crude citation counts are definitely semi-skimmed, and possibly sour.

7. Can self-citation make an ugly duckling look like a swan? Analysis shows that the citation counts of research judged excellent by peers are only marginally

influenced by self-citation. And the impossibility of disambiguating millions of names prevents the detection and eradication of self-citation. So either there is no problem or no solution.

6. Citation counts are more curate's egg than golden egg. For a single paper, they tell us little. About 10 per cent of UK papers in the top 25 per cent of journals, measured by impact factor, never get cited—even by their authors. Citation count is a basic metric, not a 'quality' judgment.

5. Is there a gold standard for bibliometric data? Not really. The accuracy and quality of citation data are subjective. Each commercial source has idiosyncrasies that preclude a definitive citation count: document types are not classified consistently, references may be cited wrongly and indexers misread information.

4. What should the birds be calling for? The citation data from a million papers every year create a unique global 'performance' currency for research. Making sure citation counts are normalised, so that each paper is compared with the average for its subject, might seem enough. But citations are skewed: UK average impact exceeds a global average that more than half of UK papers fall below. More meaning would come from a broader view of research—of, say, its economic and social impact.

3. The three hens of good evaluation are structured assessment before, during and after. But they owe more to Brussels than France: the evaluation processes in the European Union's Framework programmes are close to ideal. The REF, in contrast, is a post-hoc audit. It doesn't ask what we expected to happen, although measurements of impact might be more effective in capturing what research really delivers.

2. Are bibliometrics turtle-y useless? For all these caveats, bibliometrics can give results close to expert judgement, although this also has its complications, such as reputational bias. Generally, the panel-awarded grades in the 2008 RAE correlated with citation impact, with, granted, a lot of residual variance.

1. How can we avoid things going pear-shaped? Used responsibly, bibliometrics balance peer review without replacing it. Used irresponsibly, they displace proper management. We need to improve citation data for conference proceedings, index the 'grey literature' of the social sciences and add indicators for downloads and media attention. More indicators means more choice in evaluation.

*Something to add? Email comment@ResearchResearch.com*

'Citation counts are more curate's egg than golden egg: for a single paper, they tell us little.'

*Jonathan Adams and Daniel Hook are the chief scientist and director of research metrics, respectively, at Digital Science. Tim Evans is a theoretical physicist at Imperial College London.*

## The method in our madness

### So how did we arrive at these results?

Broadly we have kept to the methodology we used for the 2008 Research Assessment Exercise. This both generates a fair assessment and allows a reasonable comparison to the results of the most recent evaluation. The main driver of our analysis is to find the implications for what it's really all about: the money.

We weight the data by the number of staff submitted to the exercise, as this drives the total funding allocation that each institution receives. For each unit of assessment, we multiply the percentage of research deemed to fall into each quality level, for example 4\* or 3\*, by the number of full-time-equivalent staff submitted for that unit.

We then sum these totals and divide by the total FTE of the criterion that we are examining. For the institutional league tables in this issue, this is the total FTE of staff the institution submitted to the REF. For each nation, this is the total staff submitted by institutions

in that country. This approach creates a more accurate profile than simply averaging all the scores for the institution, as it accounts for different departmental sizes within an institution.

Next, we generate the *Research Fortnight* Quality Index, by weighting the profiles based on the expected funding allocations. Following careful consideration, we have elected to represent the current reality and the widely expected formula for next year: 3, 1, 0, 0, 0 (or 75 per cent funding to 4\* and 25 per cent to 3\* research).

So we multiply the percentage in each category by the allocated weight and then divide the total sum by the largest weight, 3 in this instance. This process produces a more nuanced measure of quality than a pure "grade point average" figure, and allows us to examine the results that matter financially—the 4\* and 3\* research that is expected to be funded.

We then generate our Power Rating, which informs our league table. We calculate this by multiplying the

Quality Index by the total FTE of staff submitted and then dividing by the largest resulting value. This produces Power numbers adjusted to a percentage of the largest value. The top value is 100 and everything else a percentage of this.

Market Share is calculated similarly, by multiplying the Quality Index by the FTE of staff submitted and then dividing by the total of all the resulting values. It represents the slice of the funding pie each institution might take, based on the predicted funding weight.

We recognise that quality measures reflect reputation, but argue that reputation alone tells only part of the story. Although our Power Ratings favour the large institutions, this merely reflects the realities of the funding climate.

We performed the same calculations separately on the outputs, impacts and environment measures; these tables are available online at [www.research-professional.com/news](http://www.research-professional.com/news).

**Gretchen Ransow**

### Golden triangle rising from page 3

table on pages 18 and 19. However, there is no *Research Fortnight* ranking based on research quality, not least because there were no reliable figures on the number of REF-eligible staff in each unit of assessment as we went to press.

Some institutions have made significant progress through the power rating rankings since 2008. Institutions climbing four places or more include the University of Exeter in 21st place, the LSE in 23rd place, the University of Kent in 32nd place and the University of Surrey in 36th place.

Meanwhile, universities that have dropped by four places or more include Liverpool in 22nd place, the University of Sussex in 34th place and Goldsmiths,

University of London, in 57th place.

Towards the bottom of the table, the University of West London fell 18 places to 139th and London Metropolitan University plummeted by 36 places in the list to rank 108th.

Looking at *Research Fortnight's* Quality Index only, specialist institutions submitting in just one or two units of assessments top the chart. The Courtauld Institute of Art, the London Business School and the Institute of Cancer Research are in the top three places. These institutions have at least 91.7 per cent 3\* and 4\* research. The other institutions in the top 10 for quality are, in order, the LSE, Imperial, Oxford, Cambridge, Cardiff, UCL and KCL.

*Something to add? Email comment@Research Research.com*

**Editor** Ehsan Masood  
**HE Editor** Alison Goddard  
**News Editor** Miriam Frankel  
**Comment Editor** John Whitfield  
**Senior Reporter** Adam Smith  
**Reporters** Craig Nicholson, James Field, Jenny Maukola, Rachel Hall  
**Data Coordinator** Gretchen Ransow

**Chief Sub Editor** Kris Pedder  
**Sub Editor** Martyn Jones  
**Production Manager** Katherine Lester  
**Deputy Production Manager** Laura Kipp  
**Executive Chairman and Founder**

William Cullerne Bown

**Enquiries to** [news@researchresearch.com](mailto:news@researchresearch.com)

Tel +44 20 7216 6500

#### ALL RIGHTS RESERVED

Reproducing this publication by photocopying, electronic or other means in any language without the permission of the publisher is illegal.

a **\*Research** publication

# Operation Overload

A stunning 6,975 impact case studies and 191,232 outputs were submitted to the 2014 Research Excellence Framework. Panel members tell **Jenny Maukola** how they coped with the UK's busiest assessment exercise so far.

Research Excellence Framework panel members read hundreds of outputs each and sat through meetings lasting for several days to get to grips with how to assess impact case studies consistently.

This is according to five academic panel members who conclude that, as expected, the workload in the REF was heavier than in the 2008 Research Assessment Exercise. Alexander Bird, the chairman of the philosophy sub-panel and a member of main panel D, estimates that the panels spent about 20 per cent more time on the REF than they did on the RAE. Another member, who does not want to be named, says that there were about twice as many days of meetings for the REF than for the RAE.

Several changes were made between the RAE in 2008 and the REF this year. The societal and economic impact of research were brought into the exercise, accounting for 20 per cent of the total grade. The number of main panels was lowered from 15 to 4 and the number of sub-panel units decreased from 67 to 36, meaning that each unit covered a greater subject area.

In recent interviews with *Research Fortnight*, the panel members said that, in particular, the introduction of impact meant that the REF took more of their time than the RAE did. An extensive amount of meeting and reading time was spent on sample impact case studies and calibration in preparation for the exercise. Meetings were held approximately every 6 weeks between January and October, and some of them lasted for several days.

But the meeting time was still dwarfed by the time needed to read all the work. The average number of outputs for each panel member to read ranged between 250 and 300, according to several members. Bird says he read 320 outputs, although he admits giving himself more work than the rest of the panel.

Universities had different policies about how much time away from other duties they gave their employees for the REF, and many panel members said they had a tough time fitting everything in. John Scott, a member of the main panel C and the chairman of the sociology subpanel, says: "In most cases people were carrying a normal university load and having to do [the REF work]. There were a lot of complaints about it as there were in 2008." Bird agrees: "My university was quite understanding, but there were times that, as a panel chairman, preparing for a meeting and getting through

the assessment was quite stressful even without the stuff from my institution."

Scott, who retired from his university job as pro vice-chancellor for research at Plymouth University last year, suggests that a system of secondments for panel members could be set up to make the exercise run more efficiently. "The variation is such that there needs to be some kind of recognition, and I've wondered whether panellists ought to be seconded to the REF so there's replacement teaching money going back to universities, which could then release the person to fully concentrate on the REF."

**ALTHOUGH THE IMPACT ELEMENT** was time consuming and required a lot of thinking, several panel members say that the assessment of impact was not as difficult as anticipated and they were happy with the outcome. The important thing to get right early on was consistent standards across the subpanels. It was the task of the main panels to make sure that calibration worked well between their subpanels.

"You're often comparing apples and pears, so deciding how to compare these very different things was tricky at first," says Bird. "I'm not so confident that there was the same degree of comparability across all the subpanels in the whole exercise, but arguably that doesn't matter because it doesn't make sense to compare a philosophy case study with one in clinical medicine."

Overall, panel members interviewed agreed that the REF was better organised and more coherent, consistent and integrated than the RAE. The main differences were that subpanels were more interdisciplinary in the REF and the main panels had more responsibility to keep an eye on the level of consistency.

"It was a bit more top-down than before, as I think the subpanels had greater autonomy last time around," says Bird. But he adds that there were more worries over comparability across subpanels during the RAE. "I think the greater role that the main panels had this time around meant we could answer those questions with more confidence than last time." *Something to add? Email comment@ResearchResearch.com*

'Should panellists be seconded to the REF so there's replacement teaching money going back to universities?'

## analysis

# REF 2020: what to expect

There is no break from research evaluation. **Adam Smith** considers how the rules may change next time.

Even before this year's results were published, the Higher Education Funding Council for England was laying the foundations, such as an open-access policy published in March, for the next Research Excellence Framework.

Everyone involved in the REF agrees that the move to open access will be the most fundamental shift between this round and the next. The eligibility requirement for outputs to be made freely accessible within 3 months of acceptance by a journal is a major burden on academics and the university support staff who have to make sure they comply. The consequences for a university if it does not enforce this policy now could be disastrous: a superstar researcher's work could be disqualified because he or she didn't open it up early enough.

Even so, HEFCE's open-access policy is by no means settled. First, it doesn't yet include monographs, and second, publishers are still pushing the council to tweak the requirements for when an output should be made open access.

The policy debate on this issue and others—most notably impact, metrics and equality—will continue even as institutions work out what the 2014 results mean for their next 5 years of funding.

At least when it comes to impact—which in the next assessment is predicted to increase in weight from 20 to 25 per cent—there is some experience to learn from. As well as finding answers to the questions about weighting, HEFCE will probably need to revisit the time period over which impact can be claimed, and the extent to which universities can resubmit the same, or similar, case studies in different assessments.

As the period in which a researcher can claim to have had impact is 20 years but the assessment occurs every 6 or so years, universities plan to submit refreshed case studies for research with long-term repercussions. "It wouldn't make sense to stop us from submitting another graphene case study in the future," says Liz Venn, a senior research policy officer at the University of Manchester. "It keeps on having more and more impact around the world."

But how different should 2020's case studies be from the 2014 versions? Newcastle University's internal impact awards, due to be announced in March, allow academics to submit their REF case studies only if they can move the story on. If their earlier submission showed input into clinical practice guidelines, for example, they should now show that those guide-

lines have been adopted. Pauline Addis, the research impact officer in the faculty of medical sciences, will be looking to HEFCE to adopt a similar rule.

Addis also wants the council to revisit the 20-year time period, as it was too short for some of the medical research she looked at to be submitted. "Some of the initial papers that set the scene for the impact case studies could not be used as underpinning research because they were published before 1993."

If nothing else, this year's REF has made academics understand the need to collect impact as they go along, says Venn.

Some have been doing this for years—and it has paid off in the REF. The Grantham Research Institute on Climate Change and the Environment, for example, makes a point of developing research questions out of meetings with policymakers. This is so that its researchers can do work that is more likely to be used, but it also helps to maintain a relationship, making it more likely that ideas will be picked up. A number of universities have begun to follow the same model.

**IT TOOK UNIVERSITIES TIME** to work out how to approach the new measure in this year's REF. And even when they did, impact was not always easy to establish, even in places where you might expect it to be.

For example, *Responsible Use of Data*, a report from the House of Commons Science and Technology Committee, listed written evidence from Wendy Moncur, a reader in socio-digital interaction at the University of Dundee. However, following convention, there was no mention of how Moncur had influenced the recommendations. "How do I know I've informed policy? That's a really tough question for me to answer unless I get a credit at the end of a policy document," she told a conference in November.

There is tension when it comes to this issue of credit. A politician or civil servant may have used an academic's ideas in forming policy proposals, but will not want to be seen to have been influenced by lobbying. And on the other side, in the days before impact, many academics would have felt uneasy that being credited by outside agencies might have called their independence into question.

'How do I know I've informed policy? That's a really tough question for me to answer unless I get a credit.'



For all the controversy generated by efforts to measure the societal, policy and economic effects of research, what is not in doubt is that this component of the REF has not constrained an institution's ability to shine.

Many specialist institutions have excelled in the 2014 REF, with all of their impact case studies rated 3\* and 4\*. The Institute of Cancer Research and the University of the Arts, London, rank first and second in this regard. Imperial College London is the top non-specialist institution, with 97.1 per cent of its impact rated 3\* or 4\*, followed by Cardiff University with 96.2 per cent. As with other measures, University College London shines brightest on impact: its Impact Market Share is the highest, winning 6.26 per cent of the money available.

Across the board, impact results are varied—showing that it was a real competition. Some specialist and small, teaching-focused institutions, such as the Royal Agricultural University, have performed poorly, with no impact rated 3\* or 4\*.

Underpinning any developments around the impact policy has to be this question: was it all worth it? David Sweeney, HEFCE's director of research, education and knowledge exchange, believes it was (*see Interview, page 17*). No doubt HEFCE will be running the 2014 figures minus impact to see how they compare with the 2008 results.

The REF results are never the full story. The next assessment will be influenced by a welter of research, much of it commissioned by HEFCE, on the REF's successes and failures.

At HEFCE's behest, for example, a team from the technology and information consulting group Rand has been visiting and surveying staff at 21 universities across the UK to assess the benefits and challenges in the submission process, and interviewing academics and research users on the panels about the strengths and weaknesses of impact assessment. The field work is now complete—just in time for it not to be influenced by the publication of the results. The study will be published on 25 March 2015 and launched with an event at the Royal Society.

That date might also bring preliminary indications of whether a future REF could make greater use of metrics. At the same event, science policy researcher James Wilsdon of the University of Sussex will reveal some early findings of the HEFCE-commissioned review he has been leading to look at the role that metrics might play in academic life, including future research assessments. The full results will be published after the general election in May.

**PRESSURE TO USE METRICS** is growing: publishers and software companies—and it is becoming increasingly difficult to distinguish between the two—are producing ever more elaborate algorithms for measuring researcher

output and impact, and their marketing functions are in overdrive. In addition, metrics could make the REF cheaper to run—an economy that may be forced on HEFCE by next year's public spending review.

The REF this year was not a metrics-free zone: 11 panels drew on data provided by Elsevier's Scopus software to help them evaluate submissions. These panels were in fields such as the natural sciences, where metrics are far less controversial than in, say, the humanities.

So far, however, the majority of respondents to the review team's consultation have said that they see metrics as often unfair and potentially useless for certain disciplines.

One primary concern is that greater use of metrics could undermine equality and diversity. Studies show that female researchers are less likely to be cited than their male counterparts even if their work is of equivalent quality. Wilsdon and HEFCE held a workshop on this topic on 2 December. Speaking at the event, Ruth Gilligan, an Athena SWAN adviser at the Equality Challenge Unit, summed up the feeling in the room: "We have to make sure any new measure doesn't replicate existing biases."

The first thorough analysis of equality and diversity in REF 2014 may come in February, when HEFCE plans to publish a study of how the researchers submitted to the REF compare with the academic population as a whole. Data from the Higher Education Statistics Agency show, for example, that 2,640, or 1.5 per cent, of the 181,385 academics working in the UK in 2011-12 were from the black British population, which makes up 3.3 per cent of the total population.

If this lack of diversity is exacerbated in REF submissions, HEFCE will have work to do to improve the system for the next REF. Patrick Johnson, the University of Manchester's head of equality and diversity and an adviser to HEFCE on these issues, noted at the workshop that although institutions in the REF looked at the impact of their submission on the equality of their staff, they usually did so at the end of the process, rather than at the beginning.

What's still up for grabs is whether the various lessons drawn from REF 2014 prove to be pointers to the future or one-offs, examples of how not to do a research assessment. REF managers at universities are already hard at work preparing for 2020. But they will be aiming at a moving target for some time to come. "Next time around we'll be a lot better prepared," says Venn, "but it's important that the rules don't change too drastically." *Something to add? Email comment@ResearchResearch.com*

'Underpinning any developments around the impact policy has to be this question: was it all worth it?'

## analysis

# What next for HEFCE?

**Rachel Hall** considers whether the Higher Education Funding Council for England can retain its influence even if the Research Excellence Framework is scrapped.

The Research Excellence Framework has created a lot of work for the Higher Education Funding Council for England, which runs the exercise. Now the results are out, the UK government is questioning whether the REF should continue to inform the allocation of £1.6 billion in research funding. Combined with the loss of teaching grants, the suggestion that the REF could be dropped threatens HEFCE's existence.

For almost three decades, research has been funded through the dual-support system: universities have received block grants informed by the quality of their research, and they have also applied for competitive grants. Earlier this month, the vice-chancellors' group Universities UK told its members that they must "be prepared to make a robust case in support of quality-related funding" in the run-up to a spending review that will take place after the general election in May 2015.

HEFCE has already launched a defence of the practice. It published a review on 8 December that said universities considered quality-related funding to be of "irreplaceable value" and to give stability to longer-term strategic investments. It also funds novel research that might struggle to get support from the research councils, the review said. David Sweeney, HEFCE's director of research, education and knowledge exchange, said the review's findings were evidence of the "commitment to the dual-support system" at universities and colleges.

But the introduction of higher tuition fees in 2012 has already reduced HEFCE's power. Before the coalition government came to power in 2010, the council had a remit to distribute £7.5bn in public funding to universities and colleges. That figure had fallen by a quarter by 2014.

HEFCE's job is not just to distribute funds: it has had a regulatory role since its inception in 1992. "The notion that there is a non-departmental public body at arm's

length from politicians, dealing with issues in the funding and regulation of higher education, is very important," says Rama Thirunamachandran, the vice-chancellor of Canterbury Christ Church University and a former director of research, innovation and skills at HEFCE.

He says that the alternative—direct control from the government through the Department for Business, Innovation and Skills—would be "detrimental" for university auto-

my and leave universities vulnerable to the vagaries of political whim.

Yet HEFCE's job as a regulator is likely to become increasingly difficult, according to Nick Hillman, the director of the Higher Education Policy Institute. In the past, the funding council could withhold grants unless certain conditions were met. Now that smaller sums are at stake, its power is diminished. Legislation that may have strengthened the hand of the funding council was expected as part of the coalition's reforms of higher education, but it was never introduced to parliament.

One way for the council to accrete influence would be to acquire regulatory functions from the organisations to which it contracts out, such as the Quality Assurance Agency for Higher Education and the Office of the Independent Adjudicator. This would also enable HEFCE to reduce overheads and the bureaucratic burden on universities. However, Hillman argues that it would be "phenomenally difficult to deliver". One barrier is that HEFCE is an English body, whereas some of the other organisations, including the QAA, are UK-wide.

"When this government came in it had an explicit desire to cut as many quangos and middle bodies as it could, but it couldn't find a way to make that work," says Hillman. He also questions how many functions it is advisable for a single body to have, and whether the outcomes would actually be improved.

Instead, the council is expected to take on different roles such as protecting student interests in the marketised world of higher education. "The government was clear that HEFCE should have a student champion role and, although it hasn't put that into primary legislation as intended, we can see from the Competition and Markets Authority that everything is going in a slightly more consumerist direction," says Hillman.

Indeed, efforts to promote student choice have led to the expansion of alternative providers of higher education in England. HEFCE has recently been asked to expand its remit to monitor their financial health.

And should the REF continue, HEFCE is likely to retain responsibility for it, given that the council is widely seen as a suitable manager. "HEFCE has continued to find ways to ensure that the process is as rigorous and robust as it can be, while making sure that the administrative burden is kept to a minimum," says Thirunamachandran. "It has helped panels to identify pockets of excellence wherever that excellence might have been found."

*More to say? Email comment@ResearchResearch.com*

'HEFCE is expected to take on different roles such as protecting student interests.'

# More than numbers

As David Sweeney prepares to hand over the REF, **Adam Smith** reviews the impact of the exercise's often outspoken architect.

David Sweeney, the voice of the Research Excellence Framework, claims he's a mere statistician—a numbers man. But don't be fooled. He's a first-order strategist who watches chess tournaments online.

The REF's numbers are based on words, of course: the research papers, books, monographs and impact case studies are reduced to numbers by the panels Sweeney is eager to praise. Moreover, Sweeney's words and the way he uses them have held the attention of researchers and university administrators over the past 6 years.

As director for research, education and knowledge exchange at the Higher Education Funding Council for England, Sweeney has not just coordinated the debate about the UK's research assessment system: he has charged into it. He has stood up at research policy conferences to correct speakers' misconceptions of the REF. He throws out provocative ideas, often with the intention of getting a rise out of people in the often staid meetings between vice-chancellors and officials. People from the other funding councils are also involved in coordinating the REF, and its manager Graeme Rosenberg runs the process behind the scenes, but make no mistake: Sweeney is the front man.

A big part of his job, he says, has been going out to collect the views of people from universities. HEFCE is one step removed from government—you wouldn't find directors-general from the Department for Business, Innovation and Skills, for example, playing devil's advocate with university leaders as Sweeney has done. "If there wasn't a HEFCE, who would do the public engagement between the government and the higher education sector?" Sweeney says over lunch, a fortnight before the publication of the REF results.

Some of those who encounter him love his candour, not least because it is rare in an official. Others disagree with his argumentative approach or are angry about the policies he oversees. He appears unmoved by both these concerns. Argument, he says, is a form of consultation. It is the "essential tension" in the development of policies such as the REF, he adds. It's a rather academic approach that he takes: critical, questioning, provocative. And it's unlikely to change as he begins to ramp up his activity in other parts of his brief, including knowledge exchange and health policy.

He thinks his style works. He says that although he's had a great many tense discussions with university figures over the past 6 years, they always concluded with

the feeling that something had been achieved. That must be satisfying for a man who says he didn't pursue a research career because he didn't think he was good enough and doesn't like to focus on narrow projects.

Perhaps the biggest innovation he has overseen, and one of the more controversial, has been the introduction of impact—the hardest part of the REF, he concedes. He says some people are asking him not to tweak the rules because it took ages to understand them; others are calling for change and especially for simplification. "We've got to look at impact again," he acknowledges.

He wants to hear all over again from people who are critical of impact as well as those who are in favour. It is very difficult to know the relative sizes of these groups, but one thing we do know for certain is that the critics can be very loud, very bold and often very famous. One of the country's most respected scientists, astronomer Martin Rees, says the REF has become a monster. "Our American colleagues are bemused and baffled by it," he says, adding that the impact agenda was misconceived and a waste of time.

Still, Sweeney believes the results vindicate the inclusion of impact: they show that impact is varied, with plenty of outstanding examples, and that although the trends in impact broadly match those in outputs, including the measure has made a difference to the results. "I'm struggling to see how there's any way you can say impact wasn't worth it," Sweeney concludes.

So impact is here to stay, and Sweeney is keen to stress that ultimately the approach taken in the next REF is not a decision for academia to make. It will involve research users, such as the 242 people who joined the panels this time around, and another group rarely involved in the research policy debate: the public. Sweeney notes that now the results of the impact assessment are known and the quality is high across the different forms of impact, it may be possible to gauge more of what the public expects from impact for the next round.

Sweeney fully expects impact to be a big part of the policy development process for 2020, but he won't be doing it. That role will be taken on by HEFCE's head of research policy, the rather less confrontational Steven Hill.

*Something to add? Email comment@ResearchResearch.com*

'I'm struggling to see how there's any way you can say impact wasn't worth it.'

## analysis

# A world of REFs?

No research-intensive countries have so far adopted the UK's Research Excellence Framework. **Miriam Frankel** detects hints of change.

There is little doubt that the UK has pioneered research evaluation, ever since the first Research Assessment Exercise was introduced under Margaret Thatcher in 1986. And yet with a few exceptions such as Hong Kong and New Zealand, few countries have rushed to adopt the idea of allocating substantial funds through a system based largely on peer review.

This may be partly because funding systems can be very country-specific. But most countries that share research-intensive ambitions allocate only a fraction of what the UK does in this way—and they make more use of metrics to do it.

Now, though, after nearly three decades in which no country chose to replicate the UK model for assessment, the situation may be about to change.

Research Excellence Framework advocates (and some critics too) argue that the exercise is not just about measuring excellence. Successive rounds have helped maintain a strong presence for UK universities in global rankings. Moreover, assessing the wider societal and economic impact of research through 7,000 case studies has demonstrated the value of research to governments that have been under increasing pressure to reduce public spending. These are among the reasons why the UK's model for research assessment may not be an exception for much longer.

In Sweden, Vetenskapsrådet, the national research council, was commissioned by the country's former education minister Jan Björklund to come up with a research assessment model "including peer review" to evaluate research quality, relevance and "societal impact". This would replace the country's performance-based research funding model in which institutions are judged on two indicators: bibliometrics and external research income. The model is used to distribute the government's block grant of research funding, which makes up some 40 per cent of Swedish universities' total research income.

Sara Monaco, a senior analyst in research policy at Vetenskapsrådet, says the council will submit its proposal this month. She hopes that it will help to improve the quality of research in the country and reverse Sweden's recent drop in league tables. "We have been looking at the REF, of course, but we have also been very inspired by Australia and other countries," she says. "We think the

part concerning impact is very interesting, so we basically copied that bit, although we made some adjustments."

The result is a system that is similar to the REF in some ways, but different in others. Like the Excellence in Research for Australia initiative, the Swedish system will assess all research rather than just excellence, and there will be more reliance on metrics. "To reduce the workload [of the universities], we will collect administrative data from existing databases—there are a lot of statistics available in Sweden," says Monaco.

The sum of Sweden's knowledge will be assessed by 24 panels, using a mixture of peer review and metrics. Output quality will account for 70 per cent of the grade, and 15 per cent will be an assessment of impact based on a comparatively small number of case studies from each university. "Quality-enhancing factors" such as gender, mobility, education and career development will account for the final 15 per cent of the grade. "This is to try to avoid the divide between research and education that you see in the REF," says Monaco.

Monaco says that great care has been taken to remove the pressure from individual researchers. "Most researchers may not even notice there is an assessment going on," she claims. However, she acknowledges that academic colleagues remain concerned. "Typical views are that 'my colleagues in England hate the REF and they always complain about how heavy the workload is'," says Monaco. "The focus on the individual researcher and whether he or she is REF-able has received a lot of negative attention. But we are not interested in assessing individual researchers."

Whether Sweden manages to convince its researchers of the plan's merits, and indeed whether the government will be able to implement it, is hard to say. Sweden was recently plunged into a political crisis, and a snap election is expected in March 2015.

Sweden, however, isn't alone. In the Czech Republic, the ministry of education, youth and sport has commissioned an international consortium led by Technopolis, a global research consultancy, to design and pilot a national research assessment system. Technopolis has looked at 10 different countries, including the UK, to try to draw lessons to influence the Czech system. Paul Simmonds, the UK's managing director of Technopolis, says: "It is fair to say that the UK experience has figured prominently in the design."

A draft of an interim report on the design of the system, seen by *Research Fortnight*, suggests that expert

'In Sweden we think the impact part is very interesting, so we basically copied it.'

panels will “draw on a mix of appropriate quantitative and qualitative data to support their professional judgement”. The panels will also assess the “societal relevance” of the research, which includes “societal impact” and knowledge transfer activities.

Sweden and the Czech Republic are just two examples; there is confidence that more countries are likely to follow. Steven Hill, head of research policy at the Higher Education Funding Council for England, says that Italy is among the nations interested in learning from the UK’s experience of impact. Italy already has a national evaluation system that uses metrics for science and peer review for the humanities. And Monaco says that Russia is another country looking for an improved model.

“Personally I think people are looking very hard at the impact element in particular,” says Hill, who will be the new face of the REF. “I can see that being picked up in other places.”

Another supporter is Diana Hicks, a professor of social policy at Georgia Institute of Technology in the United States, who published a paper comparing research assessment exercises in a number of countries in 2012. “Although it is a lot of work for everyone, the REF has certainly raised the game of UK academics,” she says. She adds that she “can’t wait” to get her hands on the impact case studies, which she refers to as “a wonderful data source”. However, she stresses that it is not something that is likely to be picked up in the US at a national level, because the country has highly autonomous institutions and does not have a dual-support funding model for research.

**THERE IS LITTLE APPETITE** for a REF-like model in Germany, where the funding system takes wider factors such as graduate schools and clusters of excellence into account, according to Gerhard Duda, the head of European research at the HRK, Germany’s national association of rectors. He says the German system is “less brutal” than the REF. “To be frank, we are worried about these permanently increasing impact requirements,” he says. “I think cooperation between universities and industry is working better in Germany, although not to the same degree in all economic fields. And maybe this is one of the reasons that universities are not pushed more heavily in this [impact] direction.”

Duda also does not think that a REF-like model will become a global fixture. “Especially this impact thing, it is like a kind of pendulum—we are just having a swing to the direct and quick impact side. This will change again and the long-range contribution of science and human and social sciences will be understood better again. I’m very sure.”

Duda argues that the UK has always been quick to implement “radical solutions” and that it often gives them up for something completely different as soon

as other countries start to follow. He speculates that this could potentially be because of the concentration of power in the UK. “In Germany you have 16 different states that are providing 90 per cent of the financing for universities. So changes are not that radical because it is such a diverse system of power.”

Many of Duda’s views are backed by Julia Lane, a fellow and senior managing economist at the American Institutes for Research. Lane was one of the designers of Star Metrics, a consortium of science agencies and research institutions brought together to document the impact and return on research investment of federally funded R&D, using administrative data. In 2010, a number of funders, led by the National Institutes of Health, committed \$1 million (£637,000) for 5 years to the project. The initiative has led to the development of Umetrics, a large-scale, automated data platform for universities. The first results from Umetrics were published in *Science* in April.

“We’re all trying to foster research and we’re all trying to be accountable. That is a perfectly reasonable thing to do,” she says. “But we should have an informed discussion about how best to do that. It’s like that conversation has not taken place in the UK—it was decided that the REF should occur and that’s it.” Lane argues that this “top-down approach” driven by a “small number of bureaucrats” could never work in the US. “The US system was set up to make it very difficult for a small group of individuals to have power. Universities can make their cases directly to Congress.”

Lane is particularly critical of the impact case studies in the REF, arguing that they are a waste of researchers’ time and skills. “You’ve got the wrong people telling the stories and you’ve got too many stories,” she says. “No minister is going to sit down and read 5,000 case studies.” She also argues that the REF ignores how science and impact actually happen—postdoctoral researchers play a big part in making them happen, she says, but are disadvantaged by the REF.

Will such criticism fall on deaf ears? That will depend to some extent on the future funding climate. If pressure on public funds continues then policymakers will demand more evidence that public investments are yielding results, and universities will be increasingly compelled to try to move up the global rankings. All of that points towards more and not less evaluation, whatever the final shape of the assessment exercises.

Countries that are considering following suit should take note of one thing, though: once you’ve gone down the research assessment path, it can be very hard to go back.

*Something to add? Email comment@ResearchResearch.com*

‘The UK’s top-down approach, driven by a few bureaucrats, could never work in the US.’

**John Whitfield** has seen the future of UK research assessment. If you don't want to know the result, look away now.

**2018** Rumours that cage-fighting bouts will be staged to separate departments equal on all other measures in REF2020 have universities pondering their strategies. "We thought about creating a chair in nightclub bouncing," says one pro vice-chancellor. "But then we remembered that no-one fights dirtier than an academic. Facepalm."

**2024** HEFCE convenes a panel to investigate the potential use of alt-altmetrics. These include conversations overheard on public transport, graffiti on toilet walls, parodies in *The Onion*, and crackpot pseudoscientists taking up a garbled and traduced version of your work. Arts and humanities scholars complain that such measures are prejudiced against their fields and that the UK hasn't had any public transport for the past 5 years.

**2030** HEFCE adopts 'unbundling' for the submission of researchers to REF2032. "From now on, researchers can submit their most excellent genes, brain regions and body parts and leave their, shall we say, 3\*-and-below features to one side," explains a HEFCE spokeswoman.

**2038** REF2038 is universally acclaimed as objective, transparent and free of gimmicky criteria. ARMA issues a statement pointing out that if things carry on like this, it

might as well pack up and go home. "We're as mystified as you are," says a HEFCE spokesman.

**2043** Without explanation, the REF-optimisation computer assigns 28.53782 per cent of the total marks in REF2044 to impact. A physical geographer at a midlands institution whose Orcid ID begins with the same sequence of digits goes into hiding from cult-worshipping colleagues bent on deification/sacrifice.

**2050** Rather than assessing outputs from the previous 6 years, REF2056 will use big data and mutant pre-cognitive seers to measure each academic's performance over the coming assessment period. "We apologise for ushering in a chilling dystopia," says a HEFCE spokesperson. "Oh, and don't bother, arts and humanities researchers. We already know what you're going to say."

**2059** HEFCE replaces its entire suite of assessment tools—including peer review, impact case studies, metrics, altmetrics, alt-altmetrics, covered-in-tattoos-and-piercings metrics, pub-quiz winnings and the ducking stool—with phrenology. "Groping skulls is way quicker, cheaper and more dignified than anything we've tried so far," says a spokesdroid. Russell Group universities begin poaching lumpy-headed staff.



# HE

**Policy and markets  
in higher education**

HE is a new service for your whole university that provides highly analytical, robust and timely coverage of policy and markets in higher education. It cuts through the information overload to make sense of what is happening.

#### Features include

##### *8am Playbook*

A weekday briefing on what to expect from the day ahead in higher education, infused with the insight of our experienced editors.

##### *Policy Watch*

We monitor the institutions making policy and provide objective briefings on what their outputs mean for universities.

##### *Parliamentary Monitoring*

The latest intelligence from Westminster and the devolved nations, updated each morning and sifted to highlight important content.

##### *In-depth analysis*

Experts provide rapid, in-depth analysis of major events to inform your institution's strategic thinking.

A subscription to HE enables senior staff to make better-informed decisions and liberates their advisers from the tyranny of monitoring policy and politics.

**HE is available as an upgrade to your Research Professional subscription.**

To request a free trial, please contact: **Alison Warder, 020 7216 6526, [aw@ResearchResearch.com](mailto:aw@ResearchResearch.com)**