

Research Evaluation: Past, present and future

Edited by Dr Laura Brassington



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About the authors

Bahram Bekhradnia is the founder and President of HEPI. Bahram was previously the Director of Policy for the Higher Education Funding Council for England (Hefce), where he presided over several Research Assessment Exercises.

Nick Hillman is Director of HEPI.

Professor Nick Ellison is Professor of Social Policy at the University of York.

Dr Helen Carasso is an Honorary Norham Fellow in the Department of Education at the University of Oxford.

Dr Diana Beech is Chief Executive Officer of London Higher – the representative body for over 40 universities and higher education colleges in London.

Professor Cara Aitchison is President and Vice-Chancellor of Cardiff Metropolitan University.

Professor Iain Gillespie is Principal and Vice-Chancellor at the University of Dundee.

Clare Viney is CEO of the Careers Research & Advisory Centre Ltd (CRAC), which manages Vitae, a non-profit programme with over 50 years of experience enhancing the skills and careers of researchers.

Ellie Russell is Deputy Head of Policy and **Jennie Eldridge** is Head of Doctoral Programmes at University Alliance.

Professor Peter Mandler is Professor of Modern Cultural History at Gonville and Caius College, Cambridge.

Professor James Wilsdon is Digital Science Professor of Research Policy at the University of Sheffield and Director of the Research on Research Institute.

David Sweeney CBE is the former Executive Chair of Research England (2017-2022).

Foreword

Bahram Bekhradnia, HEPI President

Like the Research Assessment Exercise (RAE) before, created more than 30 years ago, the Research Excellence Framework (REF) has a unique place in the UK's higher education system. And like the RAE, the REF has evolved, and arguably been improved, in part in response to criticisms of its processes, and in part to take account of changing academic, social and political realities. The most significant change, and perhaps the most controversial, has been the inclusion of 'impact' as a significant element in the assessment, as a direct response to a political requirement to show that public investment in research produces clear benefits. After a shaky start, the assessment of 'impact' is now well established and is a rare example of political interference in essentially academic matters resulting in an improvement. The assessment process has also been adapted to permit inter-disciplinary research to be better evaluated, addressing early – justified – criticisms that it failed properly to evaluate inter-disciplinary work and so inhibited academics from undertaking such research. It has been modified to ensure that academics taking a career break and early career researchers can be fairly assessed. And the change from an ordinal rating scale to the star system has been significant.

So the REF, like the RAE before it, has evolved – and there can be little doubt that it has been one of the reasons for the international pre-eminence of UK universities in research. But the REF has downsides, and arguably these have become so serious as to raise questions about whether it can continue in its present form. As a dominant feature of academic life, it has

led academics – and university leaders – to focus on research over teaching and other academic activity. The measures taken to increase the value placed on teaching have been puny and unsuccessful compared to the imperative the REF provides to focus on research. It is certainly not the only driver of the focus on research which can be observed in all higher education systems, the majority of which do not have a driver as powerful as the REF – but its role in determining the allocation of unconstrained research funds provides an irresistible driver of behaviour. It is also the victim of its own success, as increasing numbers of universities have progressively improved the quality of their research and obtained higher grades, while traditional research powerhouses – already performing at the highest levels – have been unable to demonstrate similar improvements. It has required ever increasing contortions to use REF results in a way that protects the funding of the strongest research universities, causing angst and upset among those who have improved their quality but whose funding has not increased to match.

A fundamental rethink is required of the REF and indeed more generally of research policy and funding – a rethink that is already under way with the Future Research Assessment Programme (FRAP) review – and the series of essays contained in this report will make a welcome contribution to this rethink.

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1. The REF: A hydra-headed beast or an effective policy tool?

Nick Hillman

A web of intricate complexity

When I attend events on higher education policy with more than a handful of academics present, the conversation invariably descends to complaints about ‘marketisation’, ‘commodification’ and ‘neo-liberalism’. Beyond signalling a speaker’s general political outlook, these flabby concepts are used to indicate a dislike of metrics, league tables and other accountability measures. But their widespread use can wrongly imply the higher education sector has a single (negative) view about such assessments.

In contrast, when the higher education sector is asked to evaluate itself, as with the Research Excellence Framework (REF), managers are drawn to systems of enormously intricate and sensitive complexity, as the chapters here by Nick Ellison and Clare Viney help to explain. With the REF, the sector then opts to make the process even more complicated, as Peter Mandler’s piece makes clear – for example, by running voluntary initiatives like shadow REFs inside institutions, which serve as a dress rehearsal for the real thing.

It is all an amazing sight to behold. In scripture, the number seven is used for completion, so it seems fitting that once each septennium, this complex and carefully built web captures the brilliant research conducted throughout the UK, as Cara Aitchison’s chapter on Wales so clearly explains. This happens irrespective of whether the research is already well known or, as Diana Beech explains in her chapter, it has previously been

overlooked. The REF is comprehensive, trusted and the envy of many other countries.

How the REF came to be

Helen Carasso's contribution usefully reveals how today's research assessment came to be and includes a consideration of the key drivers within the old University Grants Committee (UGC). People will invariably point out in response that the UGC is long gone while the REF marches on to tunes played in Whitehall and Westminster - and, as Iain Gillespie shows, Edinburgh. But this is too simplistic.

Policymakers typically follow the aphorism 'don't let the best be the enemy of the good', meaning chasing perfection has an opportunity cost, and they tend to work at a higher level of granularity than academics. So, if those conducting research in universities really do want a less nuanced, lighter touch and simpler assessment of what they do, then they could leave it to policymakers to impose something more straightforward, though it would have sharper edges.

Such a system would probably also have less money distributed on the back of it, for it is the very complexity and sensitivity of the current process, honed over decades, which makes the REF such an irresistibly powerful tool in the competition for resources against other publicly financed initiatives.

Hard cash

After the REF process is over, the results are converted into hard cash. This is a tricky operation, as Ellie Russell and Jennie Eldridge show. But it is another area where the critics who rush to bandy around claims of 'neo-liberal marketisation' get it wrong. There are no strings attached to the Quality Related (QR) funding that flows from the REF.

It is sometimes said the perfect university funding model would entail a lorry loaded with cash arriving once a year to disgorge its contents before disappearing with no questions asked, and then magically reappearing a year later. That way, academics could be left to get on with their work. QR funding, in some respects, is as close to that lorry as it is possible to get in the modern world, at least when it comes to public spending rather than endowments.

This has led to complaints that the QR money is 'a slush fund' for vice-chancellors. This is the wrong way to think about it and not just because of the deep and deepening shortfalls in project-based research-funding, which mean university managers have less leeway in practice when deciding where to spend their QR funding. It is also the wrong way to think about it because of the depth of historic accountability upon which the detailed REF process is based.

To put it bluntly, if every £1 of public money were awarded on the same sort of rigorous peer-reviewed assessment of past performance, we would be better off as a country. Whatever financial advisers might be obliged to say, the past is often a fairly good guide to the future – in this case partly because if you spend the money well, it will set you up admirably for the subsequent REF, producing a virtuous circle.

Autonomy versus accountability

The REF methodology is also appropriate because it incorporates a deep respect for the institutional autonomy on which the success of the UK higher education sector is founded. Indeed, because the REF is backward-looking while the next REF is always hovering somewhere above you, the exercise has stumbled upon a sweet spot between accountability

and autonomy. Day-to-day politics have been removed while democratic accountability has been retained. The time lag built in to the REF also provides important (though not fool-proof) insulation against the risk of culture wars spilling over into decisions about university research, as has occurred in Australia.

Despite its benefits, no evaluation system that is trying to tick so many boxes simultaneously is going to be perfect. The REF process is too complicated, too laborious and too unpopular to be free of imperfections. However, the research evaluation process has never been static, with one notable recent change being the introduction of – and then the increase in the relative weighting of – impact. Another important shift has been the move to open-access research outputs, which is helping to reduce (but not entirely bridge) the gap between those who pay for research and those who conduct it.¹ Over the years, there has – rightly – been greater focus on ensuring the process gives more weight to concerns about societal inequalities too.

Indeed, one of the most impressive features of the REF has been how much those who have owned the initiative in policy terms – such as David Sweeney, whose piece closes this collection, Steven Hill and Kim Hackett at Research England – have been willing to respond to changing events, constructive criticism and new evidence. Admittedly, there is an incentive for them to do so built in to the process, because it is harder to cheat or game a system when the target is moving, but that again just reminds us of the REF's strengths.

1 Matt Flinders, 'The Open Access Opportunity: Building the Third Space', HEPI blog, 12 July 2022 <https://www.hepi.ac.uk/2022/07/06/the-open-access-opportunity-building-the-third-space/>

Preparing for the next wave

This begs the question of how the REF might be changed for the next wave. The Foreword here by Bahram Bekhradnia, who has a good claim to be the godfather of research assessment in the UK, suggests it is time for ‘a fundamental rethink’. Given the shifting political backdrop, the formal Future Research Assessment Programme and the fact that the new Executive Chair of Research England is likely to want to stamp her mark on the process, significant change is more likely than not.

While James Wilsdon warns about adopting even more ‘simultaneous objectives’ for the exercise, the chapters gathered here collectively suggest some changes that might sensibly be made. As a think-tank Director swimming among policy for a living, I want to dwell upon two more.

First, when it comes to the REF, it continues to feel as if non-traditional research outputs – such as think-tank publications – resemble a square peg in a round hole. Yet these can be a very quick road to impact, and those academics who are most focused on having influence do nonetheless find ways to hammer the peg in. For example, the rich Impact Case Study database for REF 2021 shows how a number of influential academics researching higher education have used HEPI output, which is not generally regarded as so clearly ‘REF-able’ as a monograph or journal article, to prove their impact:

- i. Professor Robin Middlehurst of Kingston University referred to her influential HEPI report on ‘alternative providers’;
- ii. Professor Neil Morris of the University of Leeds referred to his HEPI blog on ‘the unbundled university’;
- iii. Professor Nicola McLelland of the University of Nottingham

noted how the findings from her research had informed a HEPI paper on the decline in language learning; and

- iii. Professor Claire Callender of Birkbeck, University of London, referred to her chapter in a HEPI collection on the decline in part-time students.²

Even though the least well-read think-tank paper will be seen by far more people – overall as well as within the corridors of power – than the average piece of academic output, researchers are still more drawn towards traditional outputs than those more likely to fall into the hands of policymakers. This is not an attack on traditional academic publishing: think-tank reports or other accessible or popular versions of academic work serve a different purpose and are often a supplementary route for getting the same sort of information into different places, while acting as an advert for the underlying research. A REF process in which both the rules and the way they are implemented did more to encourage the submission of a wider range of outputs would feel appropriate as we approach the second quarter of the twenty-first century.

Secondly, the inextricable link between undergraduate tuition fees and access to those Research England's funds that are distributed on the back of the REF is a little strange. Unless you are in the Approved (fee cap) part of the Office for Students' Register, which limits your full-time undergraduate fees for home students to £9,250, you have no access to the QR funding that is distributed on the basis of institutions' REF results.

If there were ever a rationale for limiting QR funding to such a subset of institutions, which I doubt given other well-

² Research England, Impact Case Study database, 22 June 2022 <https://results2021.ref.ac.uk/impact>

respected institutions are also research active, then it no longer exists. Teaching and research were both once jointly funded in England by the Higher Education Funding Council for England (Hefce) but, when Research England was spun out of Hefce and into UKRI and once Hefce was replaced by the Office for Students, a new wedge was driven between teaching and research. This split was confirmed when the Minister for Science job, having been separated from the Minister for Higher Education job, was then given to two separate people. Whereas public policy used to embed the idea of a nexus between teaching and research, it no longer clearly does so.³

If Quality Related research funding is designed to fund the best quality research, why limit it to institutions that have taken one particular approach to setting their fees for undergraduate courses? As research budgets grow, this area should be looked at afresh, perhaps as part of the formal post-legislative scrutiny of the Higher Education and Research Act (2017) or as part of the forthcoming Higher Education Bill. Otherwise, there is a risk the current rules will come to seem like monopolistic behaviour stemming from an unholy alliance between existing universities wanting to hold back competition and the Government wanting to limit demands on public funds.

Conclusion

This collection does not claim to cover every aspect of the REF. For example, there is not very much in the pages that follow on the ways that funding is allocated on the back of the REF process, and how this differs across the UK. But the chapters should be read alongside the other contributions HEPI has

3 Joanna Thornborough, 'Examining the elusive 'nexus' between teaching and research', HEPI blog, 12 July 2022 <https://www.hepi.ac.uk/2022/07/12/examining-the-elusive-nexus-between-teaching-and-research/>

already published, and will continue to publish, on our website and elsewhere.

Research assessment exercises have been around for longer than most British universities and, despite the commitment to ‘fundamentally rethink the assessment of research’ in Labour’s manifesto for the 2019 General Election, they are unlikely to disappear any time soon.⁴ The general concept of closely evaluating research might be approaching middle age and may even be on the cusp of a mid-life crisis, but it has also notched up a good record of achievement. It seems likely there are too many people around who value its contribution to push it into early retirement any time soon.

4 Labour Party, *It’s time for real change*, 2019, p.41 <https://labour.org.uk/wp-content/uploads/2019/11/Real-Change-Labour-Manifesto-2019.pdf>

2. The Research Excellence Framework: 101

Professor Nick Ellison

What is the Research Excellence Framework (REF)? For more than 30 years, at roughly six or seven-year intervals, UK universities have participated in a nationwide exercise designed to assess the quality of their research. Institutional submissions are divided into 'Units of Assessment' (UoA) – usually disciplinary departments or schools, research centres or combinations thereof. Evidence of research quality is based on academic outputs, research Impact Case Studies (since 2014) and the quality of the 'research environment', including departmental research strategies, staffing arrangements, equality and diversity strategies, research grant awards, PhD recruitment and wider contributions to the relevant discipline(s). Each Unit of Assessment is assessed by a sub-panel of academic experts who read and score the outputs, assess the merit of the Impact Case Studies (alongside non-academic 'impact assessors') and score the narrative accounts, or 'environment statements', in REF terminology.

All this is quite a process – for the members of the sub-panels, to be sure, but also for staff in the submitting institutions. Both Units of Assessment and university central administrations spend huge amounts of time and energy developing and shaping each submission. But why the effort? Because achievement in the REF leads to two things: research funding from central government – roughly £9 billion will be distributed across the higher education sector over the coming six-to-seven year period; and, just as importantly, enhanced prestige for institutions that do well.

REF 2021 saw the assessment process organised through four 'main panels' (MP):

1. Main Panel A (MPA) Medical and Life Sciences
2. Main Panel B (MPB) Physical Sciences
3. Main Panel C (MPC) Social Sciences
4. Main Panel D (MPD) Arts / Humanities

Main panel membership is made up of the chairs of 34 disciplinary sub-panels, together with international advisers, impact advisers and members of the REF secretariat. Main Panel C, for example, consisted of 12 sub-panels, which varied in size from fewer than 15 to nearly 40 members depending on the number of submissions they had to assess.

Altogether, REF sub-panels totalled 900 academics, who assessed 1,878 submissions from 157 universities. Sub-panels involved the work of 76,132 academic staff, 185,594 research outputs and 6,781 Impact Case Studies. Assessment practices in each sub-panel vary somewhat according to disciplinary norms and characteristics, but the key objective is always to produce overall 'quality profiles' for every Unit of Assessment based on the scores (or 'sub-profiles') awarded to each area of assessment. Areas assessed are outputs, impact and environment, and the quality of each area is 'weighted' as follows: outputs (60 per cent), Impact Case Studies (25 per cent) and environment statements (15 per cent) of the final profile.

The assessment phase typically takes just under a year, although the full REF schedule, from the appointment of panels to the development of guidance for submitting institutions, the development of assessment criteria and so on, begins

three years prior to that. The amount of work is considerable, involving individual sub-panel members reading and scoring each of the outputs, Impact Case Studies and environment statements allocated to them, before discussing and agreeing scores with selected panel colleagues.

Once completed, REF results appear in the form of the overall weighted profiles, along with the sub-profile scores, for each Unit of Assessment. Headlines for 2021 are that 41 per cent of submissions were judged to be 'world-leading' and 43 per cent 'internationally excellent', with 14 per cent being 'recognised internationally' and 2 per cent 'recognised nationally'. Publication is inevitably followed by a short period of mayhem as institutions attempt to spin the results as best they can, aided by media efforts to develop league tables based on constructs like institutional or unit-level Grade Point Averages or the – to my mind – rather less helpful notion of 'Research Power'.

Is it all worth it? Arguments about REF abound. Could the whole thing be done simply by assessing metrics: citations + grant income + PhD recruitment etc? Maybe, although citation indices are notoriously incomplete and unreliable. Does REF skew the kinds of research undertaken by UK higher education institutions? Does it skew the content and character of academic outputs? Do larger Units of Assessment with significant economies of scale inevitably do better? There are definitely debates to be had here but, on the upside, with its efforts to attend to quality and not just quantity, and the enormous care taken by sub-panels to arrive at fair judgements, REF may well be the 'least worst' option, assuming, that is, that research assessment of some kind is required at all.

3. The birth, life and legacy of the Research Assessment Exercise

Dr Helen Carasso⁵

The predecessor of today's Research Excellence Framework (REF), the Research Assessment Exercise (RAE), was developed in the mid-1980s by the University Grants Commission (UGC) as a result of its decision to split its single annual block grant to universities in the UK into separate teaching and research streams. It needed a statistically-sound method with which to compare departments at different institutions that it could use as a transparent basis for distribution of public funding for research. This resulted in the creation of what has been described as 'the first and most highly institutionalised research evaluation system worldwide'.⁶ Looking back now at the RAE sheds light on concerns the designers of the REF are seeking to avoid; it also offers a milestone against which to consider their success in achieving the objectives of the current evaluation process.

Throughout the 1980s, the UGC became increasingly conscious that long-term underfunding of the sector was at risk of reducing the quality of the nation's research output by spreading the public money that was available to support it too thinly. The Committee therefore wanted to take a more strategic approach to the allocation of its finite resources; nevertheless, to maintain the independent self-governance

5 This essay draws on research that she carried out during the writing of: Roger Brown with Helen Carasso, *Everything for Sale? The Marketisation of UK Higher Education*, Routledge / SRHE: Abingdon / London, 2013

6 Marcelo Marques, Justin J. W. Powell, Mike Zapp and Gert Biesta, 'How Does Research Evaluation Impact Educational Research? Exploring Intended and Unintended Consequences of Research Assessment in the United Kingdom, 1986–2014', *European Educational Research Journal*, Volume 16, Issue 6, November 2017, pp.820–842

of institutions it made it clear that it would not require the new teaching and research streams of funding to be allocated internally in proportion to the split of grant received.⁷

While these intentions sound pragmatic, given the wider financial context, and reasonable, with their aim of retaining institutional autonomy, in practice the six resulting RAEs (conducted in 1986, 1989, 1992, 1996, 2001 and 2008) became a framework for increased concentration of research funding, and hence selectivity.⁸ From the UGC (and subsequently Funding Council) perspective, this model for determining the internal distribution of QR (Quality Related funding for research) positioned decisions on any resulting concentration of expertise, or closure of smaller research units, at arm's length, under the aegis of vice-chancellors and their governing bodies. However, this in-built distance also created opportunities and potentially some incentives for universities to 'game' the methods that were used to determine the outcomes of each RAE.

Although not always as immediately evident, the perceived tension between 'excellence' and diversification that underlies many of the policy debates about teaching within higher education institutions is also at the core of discussions about the nature of the UK's academic research base. These considerations influence the way in which the size and shape of that base is measured and hence the distribution of some £2.7 billion of the annual public Quality Related funding for research within UK higher education. That, in turn, indirectly influences a university's strength and competitiveness when

7 UGC, *A strategy for higher education into the 1990s*, London: HMSO paras 5.2 and 5.16, 1984

8 See Bahram Bekhradnia, 'Research assessment – Time for a rethink?', HEPI blog post, 11 May 2022 <https://www.hepi.ac.uk/2022/05/11/research-assessment-time-for-a-rethink/>

applying for research grants and contracts (including £3.8 billion of Research Council funding), creating a significant multiplier effect – all figures are for 2014, the final year in which RAE outcomes were applied.⁹

When the Research Assessment Exercise (RAE) was initially being developed in the mid-1980s, the UGC had a tradition of keeping the basis on which it apportioned its block grants between members of the sector secret. It argued that confidentiality significantly reduced the risk that the funds it distributed might be considered to have influenced the 'political direction' of academic activities and hence supported the application of the Haldane Principle of integrity and independence of academic endeavours. This was, however, to change with the introduction of the RAE.¹⁰

From the outset, the UGC believed that the process of evaluating research within each subject area required in-depth knowledge and therefore should be carried out by academics from that discipline. While it expected these distinct subject panels to work within a common framework, the Committee was clear that any comparisons between outcomes could only be valid within the work of each of these groups of assessors; it would not be appropriate for university leaders to use RAE outcomes to rank their different departments. Perhaps inevitably though, given the growing presence of league

9 Office for National Statistics, 'Research and development expenditure by the UK Government', 8 April 2022 <https://www.ons.gov.uk/economy/governmentpublicsectorand-taxes/researchanddevelopmentexpenditure/datasets/scienceengineeringandtechnologystatistics:referencetables>

10 The 'Haldane Principle' that funding for research should be allocated on the basis of academic, not political, judgements is based on views expressed in a 1918 Parliamentary Report of a committee chaired by Lord Haldane that was reviewing the machinery of government. The phrase itself was first used in a House of Commons debate in 1964 by the Rt Hon Quentin Hogg MP.

tables and the drive for universities to promote themselves, others have not followed this guidance, with research rankings now regularly published in the media on both subject and institutional levels.¹¹

The overarching framework within which RAE panels operated was, as might be expected for an emerging activity in a research-intensive environment, developed from an initial pilot (carried out under the chairmanship of the then Rector of Imperial College, London, Ronald Oxburgh in Earth Sciences Departments across the UK). It was then reviewed and modified after each Exercise. While the structure of the RAE, with subject-specific expert panels, recognised the distinct nature of research in each field, the different ways panels chose to work and the contrasting forms of university submissions they received proved challenging for the emerging analytical tools that the UGC was applying to their findings to inform the distribution of the research stream of its annual grants. This led to significant work, in advance of the 1989 exercise, to improve the transparency and reach of the RAE, including the introduction of a standard 5-point rating scale (forms of which have remained in use ever since) to be used by every subject panel.

Not only was the RAE itself in a process of constant review and evolution from exercise to exercise, but the higher education sector in which it was operating was also changing. Most notable from the point of research assessment was the consideration, for the first time in the 1992 RAE, of the

11 For example, *Times Higher Education* creates a GPA from the subject-specific results in the REF, to produce an overall 'ranking' for each institution that has participated in the assessment exercise. See: THE Reporters, 'REF 2021: Times Higher Education's table methodology', *Times Higher Education*, 12 May 2022 <https://www.timeshighereducation.com/news/ref-2021-times-higher-educations-table-methodology>

former polytechnics and colleges; now with university title, 38 more institutions were eligible to submit their research for assessment, in the hope of sharing some of the resulting QR funding. This was also the first time that universities could decide which departments and staff to submit for assessment, thus legitimising the principle that some academics were not 'research active'. The effects of this move, and the resulting decisions made by institutions, were a potential source of conflict, with early career researchers (often on a series of short-term contracts) and those concentrating on preparation of a single major output (such as a book), particularly disadvantaged.

Another unintended consequence of the RAE was the creation of a 'transfer market' in academics whose outputs rated most highly under the parameters of the Exercise. These principles were modified over time to replace the single date on which an individual's place of employment determined which institution would include them in their RAE return (regardless of where research had been conducted) to a proportional distribution of 'credit' between employers. However, these changes did not entirely address the potential for assessment of research to skew the timing and manner in which highly-published academics are recruited (or even 'poached').¹²

Many other modifications were driven by the need to reflect the differences between the nature of research and its outputs in different subject areas. Increasingly, adjustments also sought to address potential indirect inequities within the process, such as: the equal expectations of volume of outputs that were placed in early RAEs on those who had taken parental leave

12 Technopolis Group, *Review of the Research Excellence Framework: Evidence Report*, October 2018 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/768162/research-excellence-framework-review-evidence-report.pdf

during the period of assessment; and the limits on publication opportunities that arise from the precarious nature of the employment patterns of many early-career researchers.

The RAE began in 1986 as a largely qualitative process, based around consideration of the profile of individual research areas in the context of a university's wider resourcing of this work, with the only quantitative measure being research income and expenditure. Over its six iterations, this series of gradual modifications meant that, by 2008, data in relation to staff, outputs, students and income were all considered, with qualitative information concentrating on aspects such as the research environment and esteem.

The large majority of the public funding that was distributed after each RAE was in the form of an annual QR grant; this was intended to enable universities to establish and maintain 'well-found' facilities and equipment that are core to research in a particular discipline but not specific to an individual grant or contract.¹³ In practice, therefore, from the outset, QR rewarded success with additional funding, potentially further advantaging pre-existing centres of research 'excellence' and hence reinforcing selectivity based on prior achievement rather than potential or need.

This effect was compounded at various points by adjustments made in the weightings that were given to the different RAE outcomes from one year's QR allocation to the next. Table 1 shows the basis on which QR was distributed annually on the basis of the RAE 2008.

13 The effects of long-term under-funding on the ability of UK universities to maintain such 'well-found' laboratories was highlighted by Baroness Blackstone (then Master of Birkbeck College, London and Opposition Spokesperson for Education and Science in the House of Lords) in a debate on the role of the Department for Trade and Industry in the country's economic recovery (HL Deb, 13 June 1990, vol.520 cc.326-7).

Table 1: Weightings used in QR allocation 2009-2013

Quality rating (with abbreviated description)	Funding weighting			
	2009/10	2010/11	2011/12	2012/13
4* (Quality that is world-leading)	7	9	9	3
3* (Quality that is internationally excellent)	3	3	3	1
2* (Quality that is recognised internationally)	1	1	0.294	0
1* (Quality that is recognised nationally)	0	0	0	0
Unclassified (Quality that falls below the standard of nationally recognised work)	0	0	0	0

This shift of funding towards 4* departments, at the expense of those rated 2* and, to some extent, those rated 3* reflected directions to the Funding Council from Ministers. In December 2010, a Department of Business, Innovation and Skills report noted (with some satisfaction):

QR research funding is already focused strongly on internationally excellent research (3 & 4* ...), and incentivises institutions to work with businesses and charities and to supervise postgraduate researchers. It is highly concentrated, with one-third of QR allocated to the 5 largest recipients and nearly 70% to the 20 largest.*

It also signposted the Government's wish for further concentration of public funds and acknowledged their

potential multiplier effect:

HEFCE will further reform QR funding both for research and for support for the next generation of researchers to selectively fund internationally excellent research, while maintaining support for institutions leveraging funding from external sources.

In addition to the highly concentrated QR funding, Hefce set aside funds for the improvement and creation of research facilities, especially those with a potential national role; unsurprisingly, much of this money went to support laboratory sciences, and often in the universities that were already the largest recipients of QR funding.¹⁴ Attempts were made however during the life of the RAE to supplement these large allocations with much smaller initiatives to support emerging areas of research (in particular in the arts and in professions allied to medicine).¹⁵

After the first RAE in 1986, the UGC used its results to distribute just over 40 per cent of its total research grant; by the final years of the RAE, QR funding (allocated in relation to RAE results) accounted for two-thirds of Hefce's research funds.¹⁶ And whatever the original intention of the UGC had been, when introducing assessment of research in the UK, 75 per cent of QR was shared by just 25 of the UK's 170 institutions. And if that is not concentrated enough, four universities received 25 per cent of all QR.

14 For example up to 2002, the JREI and JIF schemes allocated some £900 million through a series of rounds of competitive bidding to fund 'well-found' research facilities, to a great part for the 'big' sciences.

15 For example, the Research Capability Fund which operated from 2003 to 2009 distributed a total of £125 million over its lifetime.

16 2012 figures

When, 20 years after the first RAE, a government report examined the operation and impacts of what was, by now, a resource-intensive basis on which to distribute QR funds, it endorsed the underlying principle of a dual support system (with QR for research infrastructure and competitive grants for specific projects).¹⁷ However, it criticised the RAE for its costs to institutions, the perverse incentives that were skewing publishing patterns, the extent to which it disincentivised interdisciplinary research and its favouring of pure research over applied.

The legacy of the six RAEs was therefore a boost for the international standing of UK research, through concentrated support for certain disciplines and universities, at the cost of increased stratification of institutional research capability and individual research opportunities within the country.

17 Her Majesty's Treasury, Department of Health, Department for Education and Skills, Department for Trade and Industry, *Science and innovation investment framework 2004-2014 - next steps*. Norwich: HMSO, 2006 <https://dera.ioe.ac.uk/14223/1/file31810.pdf>

4. Crediting the capital: breaking the taboo around London's research excellence

Dr Diana Beech

If there is one thing I have learned since joining London Higher, it is that it is not easy to talk about London and its successes without being accused of seeking priority status for the capital or pleading for special privilege for a place that is already seen as having it too easy.

The Research Excellence Framework (REF) 2021 results have been no exception. Despite London's 'big names' laying claim to some major achievements – with Imperial College London being found to have a greater proportion of world-leading research (4*) than any other UK university, and University College London (UCL) now ranked second in the UK for research power (3* and 4*) – there is a noticeable reluctance to give London the credit it deserves.

Unfortunately, 'London bashing' has become popular and it is no coincidence that early reports of the REF 2021 results ran with stories about the supposed decline in the proportion of top-class research in the 'Golden Triangle' of London, Oxford and Cambridge. This was calculated on the basis that UCL, King's College London, Imperial and the London School of Economics and Political Science (LSE), plus the universities of Oxford and Cambridge, had lost 2.4 percentage points of market share between them between 2014 and 2021.¹⁸

As well as going against advice not to compare the last two REF cycles given the changes to the assessment process

18 Education Editor, 'West Midlands universities make it on to top ranked list for research', *Express & Star*, 11 May 2022 <https://www.expressandstar.com/news/education/2022/05/11/west-midlands-universities-make-it-on-to-top-ranked-list-for-research/>

over the past seven years, this analysis also fails to consider the performance of the full range of London's outstanding research-performing organisations outside the chosen 'big four'.

The real picture from London is, of course, far more nuanced. As home to the largest concentration of higher education providers of any region in England, the contribution of the full diversity of London's higher education sector deserves to be acknowledged – from its small, specialist conservatoires and research institutes through to its large, multi-faculty universities of all types and specialisms – all of which are powered by researchers, ideas and collaborations from right across the globe.

The sheer size of London means the city supports a thriving research ecosystem. Just under a quarter (24.8 per cent) of all institutions submitting to the REF 2021 were based in London and around one fifth (19 per cent) of staff. London institutions also topped 14 out of the 34 Units of Assessment in the REF 2021, with the overall average of London (based on 4* submissions) beating that of the combined average of London, the East of England and the South East.¹⁹

A closer look at the REF 2021 results across all London Higher members reveals seven key points about London's research strengths.²⁰

i. London is a hotbed for the Arts

When it comes to looking for London's strong points, the top

19 James Coe, *London and REF 2021*, Joint London Higher / Counterculture Policy Note, June 2022 <https://www.londonhigher.ac.uk/wp-content/uploads/2022/06/REF-2021-policy-note.pdf>

20 London Higher, *London Higher members*, 2022 <https://www.londonhigher.ac.uk/about/london-higher-members/>

overall performing institutions in Panel D, which assesses research in the Arts and Humanities, are testimony to London's strengths in creative research and education.²¹ Indeed, eight of the top 20 institutions based on 4* submissions are in the capital, including Royal Holloway, Birkbeck, University of London and the University of Westminster. The latter was also identified as having made the most significant impact in the field of Art and Design, proving that London's universities are truly civic at heart.²² London's universities are also driven by very human values to improve lives beyond their immediate communities.²³

ii. London's multi-faculty institutions have made big gains

Despite the media preoccupation with London's 'big four' institutions, research in the capital is conducted at many more universities and higher education colleges. Indeed, the capital is fortunate to be home to several large, research-performing institutions, many of which have improved their research standing significantly since the last REF exercise.

To illustrate this point, 86 per cent of City, University of London's submission to the REF 2021 and 72.7 per cent of Brunel University London's submission were rated as being world-leading (4*) and internationally excellent (3*), confirming how London's research performance in many institutions is on the up, particularly when it comes to demonstrating breadth of expertise and the spread and diversity of outputs.

21 Dr Diana Beech, *Winning London's Arts and Minds: The Importance of Creative Higher Education Provision in the Capital*, London Higher, 2021, p.5 <https://www.londonhigher.ac.uk/wp-content/uploads/2021/06/Winning-Londons-arts-and-minds.pdf>

22 London Higher, *The London Higher Civic Map*, 2022 <https://www.londonhigher.ac.uk/civic-map/>

23 Andrew Lin, *Turning Values into Impact: The mark of a good REF?*, HEPI Blog, 19 May 2022 <https://www.hepi.ac.uk/2022/05/19/turning-values-into-impact-the-mark-of-a-good-ref/>

iii. London's specialist institutions are small but mighty

London's small specialist institutions prove that organisations do not have to be big in size to be big in impact. World-leading across fields from the Arts to the Sciences, London's small, specialist institutions consistently achieve impressive results.

With 100 per cent of its academic staff submitting to the REF for the first time, the Royal College of Art has noticeably expanded its research power.²⁴ Another provider demonstrating excellence in the Arts was The Royal Central School of Speech and Drama, which was ranked sixth overall based on 4* research in Panel D, once again proving the world-leading quality of London's rich conservatoire scene.

The same is true for London's small, specialist scientific research institutes. The Institute of Cancer Research ranked top in the country in the REF 2021 for research in Biological Sciences in the weighted assessment of research quality, impact and environment, further reinforcing its importance in The London Cancer Hub development.²⁵ At St George's, University of London – the UK's only university dedicated to Medicine, Science and Health – 100 per cent of Impact Case Studies were judged as world-leading (4*) or internationally excellent (3*).

Together, London's REF 2021 results show that the capital's research excellence comes in all shapes and sizes. To focus only on the outputs of a few institutions does a huge disservice

24 Royal College of Art, *Research excellence underpins the RCA's world-leading status for art and design*, 12 May 2021 <https://www.rca.ac.uk/news-and-events/news/research-excellence-underpins-the-rcas-world-leading-status-for-art-and-design/>

25 Dr Diana Beech, *The London Cancer Hub: stepping up for Sutton and the nation*, 17 May 2022 <https://big-knowledge.co.uk/news/the-london-cancer-hub-stepping-up-for-sutton-and-the-nation/>

to London's diverse and sizable research community and dismisses vast swathes of the capital's world-leading outputs in both the Arts and the Sciences.

iv. London's research impact is local, national and global

Research conducted at London's universities does not just stay in the capital, rather it benefits the whole nation and the world.²⁶ Published in May 2021, HEPI Report 137, *Regional policy and R&D: evidence, experiments and expectations*, makes a compelling case for why place-based investment should recognise the full diversity of regional research ecosystems and consider the power of partnerships right across the nation.²⁷ London's REF 2021 Impact Case Studies, indeed, show how research conducted at myriad institutions across the capital bring benefits not just to London but to other parts of the country and around the globe.

For one, London South Bank University has published Impact Case Studies that show how it is tackling building inefficiencies in the capital and reducing thousands of tonnes of carbon emissions per annum, while also helping the Sellafield site in West Cumbria develop safe approaches to dealing with nuclear waste. This has cut the cost of cleaning up the site by hundreds of millions of pounds.²⁸ The University of East London's Impact Case Studies similarly show how the University is researching how the early living environment in cities such as London is affecting children's development,

26 Dr Diana Beech, *London: The Civic Capital*, HEPI Blog, 13 December 2021 <https://www.hepi.ac.uk/2021/12/13/london-the-civic-capital/>

27 Sarah Chaytor, Grace Gottlieb and Graeme Reid, *Regional policy and R&D: evidence, experiments and expectations*, HEPI Report 137, May 2021 https://www.hepi.ac.uk/wp-content/uploads/2021/05/Regional-policy-and-RD_HEPI-Report-137-FINAL.pdf

28 London South Bank University, *REF 2021 Impact Case Studies*, 2022 <https://www.lsbu.ac.uk/research/research-excellence/ref-2021-impact-case-studies>

while also using emerging technologies to transform the lives of those with learning disabilities nationally.²⁹

London's global institutions, such as Imperial College London, are also helping the capital to drive advances in Artificial Intelligence (AI) and machine learning, as well as find new real-world applications for 'Deep Tech' discoveries; all of which are set to change lives across the UK, the rest of Europe and the wider world.³⁰

While the very nature of the REF exercise dictates that institutions are judged on their research excellence individually, research in the capital is very rarely conducted by institutions in isolation, and the benefits of this 'world-leading' research are usually felt far outside London. As the REF 2021 Impact Cases Studies confirm, money spent on research in London brings benefits to populations across the regions as well as across the globe.

v. London's research has the power to drive policy

Research conducted in London has the power to change perceptions of university research as being too theoretical and detached from the 'real world'. To see the real societal value of what university research can bring to individuals and to communities, we just need to look at the LSE and its research in Social Work and Social Policy, which achieved the third highest ranking in the country across all departments, with 82 per cent of submissions rated 4*. Research such as its project supporting policy and practice change for better mental health has real benefit to governments and to policymakers

29 University of East London, REF 2021, 2022 <https://www.uel.ac.uk/our-research/ref-2021>

30 Imperial College London, *Deep Tech Entrepreneurship*, 2022 <https://www.imperial.ac.uk/academic-strategy/academic-strategy-projects/deep-tech-entrepreneurship/>

around the world and can transform lives by effecting positive social and behavioural change.³¹

vi. London's research institutions are not afraid to tackle the difficult issues

As a large metropolitan city, London is faced with multiple tricky societal and environmental challenges – from knife crime to poor air quality. Although the capital and its institutions may not claim to be world leaders in solving these societal challenges, London's universities can clearly be seen to be stepping up for their city by conducting the research the capital needs.

For instance, the University of Westminster's Centre for the Study of the Production of the Built Environment is helping to enhance gender diversity and equality in the workforce and bring more women into the construction industry, so that women's voices are centre stage in future planning and building projects in the capital.³² Middlesex University London's Flood Hazard Research Centre is equally helping the capital, and other parts of the world, to navigate natural hazards and the challenges associated with rising water levels, including looking at how we can work with nature to enhance urban liveability.³³

31 Professor Martin Knapp et al, *Supporting policy and practice change for better mental health*, 2022 https://www.lse.ac.uk/Research/research-impact-case-studies/2021/supporting-policy-and-practice-change-for-better-mental-health?from_serp=1

32 University of Westminster, *Celebrating and empowering women in construction*, 2022 <https://www.westminster.ac.uk/research/impact/celebrating-and-empowering-women-in-construction>

33 Middlesex University London, *REF 2021 Geography and Environmental Studies Impact Case Studies*, 2022 <https://www.mdx.ac.uk/our-research/ref/uoa-page/geography-and-environmental-studies>

Research such as this is contributing to creating safer, cleaner and fairer communities, both in London and elsewhere, and shows London's research commitment to making the world a better place.

vii. London is also home to Queen Mary!

Finally, if the above points are still not enough to lure newspaper editors away from focussing only on the performance of London's 'big four', then they should at least include Queen Mary University of London in the mix, which somehow evades mention despite its Russell Group status and the fact that it achieved world-leading (4*) or internationally excellent (3*) status across 92 per cent of its research. Queen Mary simultaneously holds the title for being the top institution in England for social mobility.³⁴ Its Drama department was rated first in the UK in the REF 2021, once again upholding London's strengths in the Arts and making it a force to be reckoned with when it comes to sustaining both teaching and research excellence.

While this chapter only skirts the surface of London's REF 2021 successes, it shows there is much more to London's research ecosystem than the headlines would have us believe. Like other institutions across the UK, London's universities and research-performing organisations are working hard to bring the benefits of their research to those around them.

When it comes to research in London, the capital should not be thought of as competing against the rest of the country. Rather, London and its institutions are working *with* and *for* the entire country to push forwards the UK's collective excellence in research – across boundaries and across regions.

34 Queen Mary University of London, [Queen Mary named best university in the country for social mobility](#), 2021

5. Research, innovation and impact in Wales: strength in diversity

Professor Cara Aitchison

Following each Research Excellence Framework, or Research Assessment Exercise as it was named until 2008, there is extensive evaluation of the methodology, administration, outcomes and institutional funding resulting from what is undoubtedly the single most significant exercise in accountability within UK higher education.

Evaluation takes place at every level, from small research groups vying for institutional funding to national higher education funding councils seeking to leverage change with their nuanced funding models through to learned societies, national academies, Universities UK and, of course, UK Research and Innovation all seeking to reach informed conclusions about the value of research and the added value provided by funding research.

Following evaluation of the results of the 2014 Research Excellence Framework and the Stern review of research – *Building on Success and Learning from Experience: An Independent Review of the Research Excellence Framework* – published by the Department for Business, Energy and Industrial Strategy in 2016, Wales celebrated the fact that it had achieved a marginally higher overall rating for its research ‘impact’ than the other three nations of the UK. The difference was, indeed, marginal but the distinction was sufficient to stimulate a national discussion of research impact that has served to reframe research culture and shape the wider research and innovation policy and funding landscape across Wales.

The results of REF 2021 confirmed this strength with Wales again producing ‘a higher proportion of research receiving 3 or 4 stars for impact than the UK as a whole’.³⁵ Having now been included in two consecutive REFs, and having received a ‘thumbs up’ by RAND Europe in *Assessing Impact Submissions for REF 2014: An Evaluation*, published by Hefce in 2015, it appears that the assessment of impact within the REF is here to stay.

In a small nation, where the leaders of Wales’ eight universities can readily fit around a dinner table, it is relatively easy to forge both policy and partnerships between universities. Moreover, the proximity of universities and government, in a nation that still considers universities to be squarely within the public sector, lends a particular level of accountability to ‘impact’ that is perhaps less visible to or manageable by government at Westminster. Indeed, much of the research and innovation landscape of Wales exemplifies the ‘Triple Helix’ model of the intertwining of government, industry and education in developing and delivering research-led solutions to entrenched social and economic problems, including Wales’ long-standing challenge of low Gross Value Added (GVA) relative to the rest of the UK.

As a member of the joint funding councils’ working group established to develop the criteria for assessing impact introduced in REF 2014, I remember only too well the discussions that sought to define the term. In a hot meeting room somewhere in Camden over 10 years ago we played out the usual science versus social science tropes as the scientists

35 Universities Wales, ‘Welsh universities lead the UK nations for internationally excellent or world-leading research impact’, Press release, 12 May 2022 <https://nation.cymru/news/welsh-universities-lead-the-uk-nations-for-internationally-excellent-or-world-leading-research-impact/>

banded about words like ‘benefit’, ‘improvement’ and ‘increase in’, while the social scientists reminded those present that sometimes simply being critical and analysing and evaluating the flaws and failings in policy and practice is of benefit and thus an impact of reach and significance.

We have come a long way since the introduction of impact, weighted at 20 per cent in REF 2014, and in Wales the acceptance of the need to demonstrate impact, weighted at 25 per cent in REF 2021, has become aligned with the desire to focus on innovation as an equal partner in ‘R&I’. Innovation is, in many ways, the conduit to impact for the underpinning research. This relationship is now firmly supported by the Wales Innovation Network (WIN), an initiative launched in 2021 in response to the findings of Professor Graeme Reid’s report *Strength in Diversity*.³⁶

WIN has three aims:

- i. to raise the profile of research and innovation within Wales and the UK;
- ii. to provide a forum in which participants can share expertise; and
- iii. to make it easier for Welsh universities to form partnerships and share infrastructure, something that is particularly important where the majority of universities are small relative to the major research-intensive universities of the other home nations.

Higher education is a devolved matter and universities

³⁶ Professor Graeme Reid, *Strength in Diversity: Exploring opportunities for collaboration in research and innovation between universities in Wales*, Universities Wales, September 2020 <https://uniswales.ac.uk/sites/default/files/2021-09/Strength-in-Diversity-Professor-Graeme-Reid-FINAL.pdf>

form part of the Welsh Government portfolio of the Minister for Education and Welsh Language. Partnership working is essential if research and innovation are to secure government investment. Gaining support from both the Welsh Government Minister for the Economy and the UK Government Secretary of State for Wales has been vital to ensuring that WIN can have a voice in relation to the Welsh Government's plan for the economy and the UK Government's *Plan for Wales*.

The need for research and innovation to be of and for Wales and to have impact in Wales is clear. From rural, coastal and urban deprivation and third-generation unemployment through to significant public health issues, there is a need for research and innovation to stimulate economic growth, social cohesion and sustainable development. *Strength in Diversity* sets out a path for research and innovation to support economic and social recovery following both Brexit and the pandemic. The areas of greatest research impact in Wales as identified in REF 2021 are undoubtedly those that can deliver social and economic change: Allied Health Professions; Psychology, Psychiatry and Neuroscience; Earth Systems and Environmental Sciences; Education; Architecture, Built Environment and Planning; Sport and Exercise Sciences, Leisure and Tourism, and those areas of the cultural economy and creative industries that are so central to the economy of south-east Wales in particular.

What such evaluations also do is identify areas of weakness and gaps in the R&I portfolio. The need for more research in science and technology to strengthen Wales' growing industrial base in, for example, bioengineering, technology, food and drink production and processing, and medical device innovation is clear.

Our place-based economic strategies will only *win* if the industries they support are underpinned by research and innovation with internationally and world-leading impact. This requires partnerships within Wales *and* across the UK and around the globe if research is to be interdisciplinary, international and impactful.

6. Excellent research requires a supportive and inclusive research culture

Clare Viney

How the research environment and culture is impacting on the progression, inclusion and diversity of researchers has been under the spotlight over the past few years. Twenty years on from the Roberts report, *SET for Success*, much progress has been made but are we preparing researchers for careers both inside and beyond academia? Does the Research Excellence Framework (REF) environment assessment help us measure progress? Has the inclusion of so many more academics in REF 2021 compared to earlier waves helped early career researchers? How can the next REF drive better research culture?³⁷

Current context

The UK discussion around the need for gender equity in universities has evolved to a broader debate around creating a more inclusive research culture across the board. It is increasingly recognised that diversity is a crucial aspect within aspirations for excellence in research, science and technology globally. There is growing evidence that greater diversity within any workforce and more inclusive working cultures support increased innovation and creativity, and some evidence that they can enhance productivity. Funding bodies have a clear aim to drive and support equality and diversity in the research environment, and there is a shared responsibility of all those involved in the REF to advance equality and diversity.

37 Tanita Casci, Miles Padgett, Grace Gottlieb and David Price, 'The next REF can drive a better research culture', *Research Professional News*, 12 October 2021 <https://www.research-professionalnews.com/rr-news-uk-views-of-the-uk-2021-10-the-next-ref-can-drive-a-better-research-culture/>

The Department for Business, Energy & Industrial Strategy (BEIS) are cementing ambitions for the UK as a science superpower and innovation nation and have allocated £39.8 billion to research and development (R&D) through to 2024-2025 to strengthen the R&D system, attract and develop top research talent, leverage increased private sector investment and utilise R&D funding to support levelling up across the UK.³⁸

The UK Government's 2021 R&D *People and Culture Strategy* champions the importance of diversifying the research (or R&D) workforce and sustaining or expanding it over the next five years, to achieve its economic, societal and global science superpower ambitions. This involves not only recruiting but also retaining and optimising the capacity of talent in that workforce and ensuring that researchers of all backgrounds, ages and career stages thrive.

Following the Stern review in 2016, institutions were required to submit all research-active staff to the REF. UKRI put in place a number of measures to encourage transparency and fairness in the decisions made by higher education institutions to represent the excellent work of all their staff with significant responsibility for research in their submissions.

The 2019 *Concordat to Support the Career Development of Researchers*, commonly known as the *Researcher Development Concordat*, is a sector-wide agreement signed by organisations employing and / or supporting researchers, and presses funders, institutions, researchers and managers of researchers to improve the support for researcher careers in higher

38 Department for Business, Energy & Industrial Strategy, *BEIS research and development (R&D): partner organisation allocation 2022-2023 to 2024-2025*, 30 May 2022 <https://www.gov.uk/government/publications/beis-research-and-development-rd-partner-organisation-allocation-2022-to-2025/beis-research-and-development-rd-partner-organisation-allocation-20222023-to-20242025>

education in the UK. It reflects the importance of having a research culture and environment that supports researchers and facilitates excellent research. One of its three main Principles is 'Environment and culture':

Excellent research requires a supportive and inclusive research culture. This Principle recognises that a proactive and collaborative approach is required between all stakeholders, to create and develop positive environments and cultures in which all researchers can flourish and achieve their full potential.

Measuring and evidencing progress individually and collectively is not always easy. Vitae manages the UK HR Excellence in Research Award (HREiR) process, which evaluates institutions' implementation of the *Researcher Development Concordat*. Since 2010, this has been done on behalf of the European Commission, and over 100 UK higher education institutions hold the Award. One of its principles is that the research environment should be more inclusive. Analysis of Vitae's Culture, Employment and Development in Academic Research Survey (CEDARS) data (48 institutions, 12,594 researchers) shows clear evidence of implementation of the *Researcher Development Concordat* principles.³⁹ But it reveals that 27 per cent of early career respondents were over 40-years old, and nearly one-in-six remain in a postdoc role for over 10 years. This adds further nuance to our understanding that the most challenging career transition for higher education researchers is from early career, when most are on fixed-term employment contracts, to mid-career, which tends to be

39 Vitae, *Culture, Employment and Development in Academic Research Survey (CEDARS) aggregate results 2021*, September 2021 <https://www.vitae.ac.uk/vitae-publications/culture-employment-and-development-in-academic-research-survey-cedars-aggregate-results-launched>

marked by gaining an established academic post or becoming a research group leader.

Worryingly, recent surveys by CRAC / Vitae for BEIS and UKRI have shown that researchers with caring responsibilities are disproportionately negatively impacted by disruptions due to COVID-19, while some other groups of researchers (predominantly male and without caring responsibilities) report positive impact through more time for research and publication.⁴⁰

REF and progress towards building an inclusive and supportive research environment

Within REF 2021 'environment' means the environment for supporting research and enabling impact. It accounted for 15 per cent of the overall outcome awarded and was assessed against two criteria: vitality and sustainability. Each submission included:

A report detailing the submitting unit's:

- context and structure, research and impact strategy;
- people;
- income, infrastructure and facilities; and
- collaborations and contribution to the research base, economy and society.

Statistical data covering the REF period on:

- research income;

40 Vitae, *The impact of the Covid-19 pandemic on researchers in universities and research institutes*, 2022 <https://www.vitae.ac.uk/impact-and-evaluation/the-impact-of-the-covid19-pandemic%20on-researchers-in-universities-and-research-institutes>

- number of research doctoral degrees awarded; and
- information about the overall university strategy and resources to support research and enable impact.⁴¹

These are based on data reported to the Higher Education Statistics Agency (HESA).

The REF Equality and Diversity Advisory Panel's (EDAP) final report highlighted a number of key features of the strong research environments identified.⁴² EDAP Chair Professor Dianne Berry OBE and Mr Paul Davidson in their recent blog for UKRI referenced 'clear executive level leadership of, and commitment to, equality diversity and inclusion (EDI), which is evident through all aspects of institutional functioning'.⁴³

EDI was seen as a driver for change, with a recognition that support for under-represented groups goes beyond just gender-based initiatives. Exemplar environments demonstrate strong support for their postgraduate researchers and early career staff, with people-related accreditations and concordats clearly being used strategically as drivers of cultural change. However, overall institutions seem to be focussed on 'inputs' often without strategic goals. An 'outcomes'-focused strategy should be encouraged, requiring a reflective and data-driven approach with defined success measures and evidence. Although there was some evidence of a focus on structural inequalities and how they were being addressed in the better

41 Research Excellence Framework, *REF 2021: Key facts*, 2022 https://ref.ac.uk/media/1848/REF_2021_key_facts.pdf

42 Research Excellence Framework, *Equality and Diversity Advisory Panel (EDAP) final report*, 2022 <https://ref.ac.uk/publications-and-reports/equality-and-diversity-advisory-panel-final-report/>

43 Professor Dianne Berry OBE and Paul Davidson, *Building an inclusive and supportive research environment*, REF 2021, 2022 <https://www.ref.ac.uk/about-the-ref/blogs/building-an-inclusive-and-supportive-research-environment/>

submissions, there was a troubling acceptance of under-representations and EDI challenges that will simply be carried forward into the next generation of researchers. This is in spite of many pledging to tackle these issues as part of their action plans for the HREiR Award. Despite 76,000 academics submitting at least one research output, up 46 per cent from 52,000 in 2014, there is no evidence to suggest that this has opened up the REF to research staff.⁴⁴

A wholesale evaluation of the REF environment assessment is needed to understand collective progress and good practice, and recommendations for change.

The future

The way research is being conducted is changing. Increasingly, researchers are expected to work collaboratively, interdisciplinarily, inter-sectorally and internationally. They are expected to share their research, data and publications openly, and demonstrate the social and / or economic impact of their research. These developments raise the importance of values such as research integrity, ethics and reproducibility. Vitae's Researcher Development Framework (RDF) underpins much of the professional development of researchers, and frames the competencies needed for research. The RDF needs to be useful for future employers of researchers within and beyond academia, and to help researchers make sense of new environments, whether a new institution, sector or country. We are currently reviewing how the RDF connects with the wider environment, including the changing priorities of government, funders and publishers and expectations of employers across all sectors.

44 REF 2021, *Results and submissions: REF 2021, 2022* <https://results2021.ref.ac.uk>

In future research assessment, Vitae would like to see further emphasis on researchers and researcher development, and research culture within the environment assessment. We value that institutions are describing how they support equality and diversity across their staff but would encourage UKRI to go further than this in asking for an outcomes-focussed strategy, structured around existing concordats and sector agreements with evidence and data of how they are creating inclusive and healthy research environments. Vitae acknowledges that considerable effort is being made by institutions to create enabling research environments through, for example, providing professional development opportunities, EDI-related activities, bullying and harassment policies, research integrity training and mentoring schemes. However, few institutions have robust evaluation processes in place to identify whether these activities are making a difference. Through HREiR and CEDARS, Vitae offers institutions a mechanism by which to identify researchers' views and experiences (at different career stages) of specific elements of the research culture, to benchmark against the sector and sector groups and to monitor progress over time. The review of the impact and adoption of research concordats and agreements will be important to inform the future development of environment assessment.

The BEIS *R&D People and Culture Strategy* recommended a Good Practice Exchange to develop, test and evaluate ideas to improve culture sourced from the community, bringing together people from across the sector to work creatively. This concept should be accelerated as a matter of urgency to look at interventions across talent management, bullying and harassment, diversity and inclusion, recruitment, leadership

and beyond, building on the *Researcher Development Concordat* Platform of Practice.⁴⁵

We also believe that government should work with Vitae to establish a systemic approach to track the long-term career paths of all researchers to identify their impact and economic contribution and assess the supply-and-demand balance. There is a patchwork of fragmented information covering different disciplines, employment sectors and predominantly only covering early career stages. There is no, or very little, connectivity between the big datasets that do exist, for example between the Higher Education Statistics Agency's (HESA) own Student Record or Graduate Outcomes dataset and its HE Staff Record, or between funders data or ORCID (Open Researcher and Contributor ID) and any systematic data about researchers as people or employees, that could give more understanding of researcher career paths, particularly for disadvantaged or minority groups. There is growing evidence of inequities within the higher education research environment that feed through into career progression. More research is needed to understand the challenges faced by researchers at key transition points and additional support provided to facilitate those transitions whether they are within, beyond, or returning to, academia, particularly for those in protected groups. Vitae, together with the Elsevier Foundation, has launched an initiative to look at under-representation of early-career researchers of Black origin, with a specific focus on the postdoctoral and early-career academic stage.⁴⁶ We will convene Black researchers and grant recipients,

45 Platform of Practice, *Researcher Development Concordat*, 2021 <https://concordatplatformpractice.vitae.ac.uk>

46 Vitae, *Together tackling the under-representation of early career Black researchers in the UK* <https://www.vitae.ac.uk/impact-and-evaluation/tackling-the-under-representation-of-early-career-black-researchers-in-the-uk>

and stakeholders to share their experiences, so as to identify priorities, pilot interventions and share good practice on successful support programmes. The programme builds on the Office for Students and Research England's £8 million funding to 13 projects to tackle inequalities and barriers to access and participation in doctoral study for Black and minority ethnic students.⁴⁷

Future environment assessment has the potential to change behaviours and drive change, enabling the whole community to measure and monitor the progress of our evolving research culture and drive positive behaviours. Offering an inclusive research culture is essential, to ensure that a diversity of people and ideas can flourish in a productive and sustainable research and innovation system.

47 UKRI, *Improving minority ethnic groups' access to postgraduate research*, 2022 <https://www.ukri.org/news/improving-minority-ethnic-groups-access-to-postgraduate-research/>

7. The squeezed middle in Scotland

Professor Iain Gillespie

I am writing this in August 2022. The REF results have been out for a few months. We are coming down from the celebrations where we did well, and the commiserations where we did less so. Now is the time to reflect.

The REF results impact both reputation and funding. The Scottish Funding Council (SFC) was quick off the mark, announcing its final university funding allocations for 2022/23 only two weeks after publication of the REF results.

Equivalent to 'quality-related' QR funding in England, the SFC allocates funding for research to universities via the Research Excellence Grant (REG). The REG is split into three parts: a quality-related component based on the REF results, the volume of staff submitted and unit of assessment (subject) weightings (REGa); and components designed to 'top-up' short-falls in full-economic-costs based on the proportion of Scotland's competitively won non-charity (e.g. UKRI) research income (REGb) or charity research income (REGc) that each university has received. REGa accounts for nearly 70 per cent of the total.

In common with other parts of the UK, the increase in the selectivity of funding following RAE 2008 was rapid, with 1* research being supported through the funding model in 2009/10, but only 3* and 4* research supported by 2012/13, at a weighting of 3 to 1 in favour of 4*. By 2021/22, the last year before the results of REF 2021 were available, the weighting was 3.31 to 1. Following consultation, the SFC increased the weighting to 4:1 for allocation of REGa in 2022/23, aligning

Scotland with the rest of the UK, along with some other adjustments – such as changes to the Unit of Assessment weightings and removing the additional funding previously allocated only to STEMM (Science, Technology, Engineering, Maths and Medicine) Units of Assessment.

While Research England has rewarded success in the REF with a 10.4 per cent increase to quality-related research funding, REG funding in Scotland has increased by only 1.6 per cent from 2021/22.⁴⁸

So where did this leave the University of Dundee, as a mid-sized Scottish research-intensive university? The answer is in the ‘squeezed middle’, that group of institutions which, despite excellent overall results in the REF, including outstanding results in some areas, have received a significant reduction in REG funding from the SFC.

There are a number of reasons for this, the most obvious being the considerable institutional differences in the growth of full-time equivalent (FTE) staff submitted between REF 2014 and REF 2021. For example, there was a 65 FTE increase (16 per cent in the University of Dundee’s submission, whereas the University of Edinburgh increased its submission by 810 FTE (46 per cent)).

The sustainability issue is not just a consequence of the decisions relating to the 2022/23 research funding settlement of course. As highlighted by Universities Scotland, there has been an 18.2 per cent real terms cut to REG since 2014/15, accompanied by a decline in the share of UKRI funding (from a 15.9 per cent share to a 12.9 per cent share) won by Scotland’s

48 UKRI, *Research England £8 billion investment in England’s universities*, 14 July 2022 <https://www.ukri.org/news/research-england-8-billion-investment-in-englands-universities/>

universities.⁴⁹ This has occurred against a backdrop of evidence that every £1 invested in university research by the Scottish Government generates an economic return of over £8.

The picture of declining investment in the research base of the Scottish higher education sector has also been compounded by broader challenges to institutional budgets because SFC teaching grants have also declined by 14.6 per cent in real terms in the same period with income further constrained relative to England by the effective cap on places for Scottish-domiciled students and tuition fees.⁵⁰ We should be celebrating that 85 per cent of Scotland's submitted research has been assessed as either world-leading or internationally excellent, but note that in the arms-race of REF 2021 only two out of the eight Scottish institutions generally regarded as research-intensive improved their rankings in the league table from *Times Higher Education* based on grade-point averages. Increasingly, it looks like the Scottish funding model is placing Scottish research-intensive institutions at a competitive disadvantage.

Our response? To continue investing in research despite the financial challenges that strain sustainability and by necessity require greater income generation through unregulated tuition fee income from international markets. Our strategy commits us to growing international excellence, reach and impact in research. We will continue dialogue on financial sustainability with the SFC and Scottish Government, both as an individual institution and through the sector, but increasingly we look to

49 Universities Scotland, *Prosperity and inclusion: Higher education and the wellbeing economy*, 2022 <https://www.universities-scotland.ac.uk/wp-content/uploads/2022/04/UniS-cot-Prosperity-Inclusion.pdf>

50 Universities Scotland, *Prosperity and inclusion: Higher education and the wellbeing economy*, 2022 <https://www.universities-scotland.ac.uk/wp-content/uploads/2022/04/UniS-cot-Prosperity-Inclusion.pdf>

enterprise and entrepreneurial solutions to break free of the constraints of flat future funding intentions from a Scottish Government strong on rhetorical support for higher education but unable to provide sufficient resources to enable the competitiveness of the Scottish research intensives, nationally and internationally.⁵¹

51 Universities Scotland, *Response to resource spending review*, 2022 <https://www.universities-scotland.ac.uk/response-to-resource-spending-review/>

8. Funding the Future

Ellie Russell and Jennie Eldridge

A raft of consultation deadlines topped and tailed the May 2022 REF results. Two of these consultations, one each from Department for Education and UKRI, could impact the sustainability of the research, development and innovation (RDI) ecosystem in different ways.⁵²

There is a lot to celebrate about the wide distribution of research excellence and the diverse ways this research is benefiting society that has been demonstrated in the REF 2021 results.⁵³ The increase in the volume of high-quality research across the UK is also a reminder of what is at stake in the political and funding uncertainties surrounding universities and research collaboration.

The long-running lack of discernible progress on Horizon Europe association is a source of great concern, and the irony of Business Minister Lord Callanan remarking during a House of Lords Question on European Research Council grants that ‘the EU entered into an agreement which they are now refusing to implement’ will not have been lost on many.⁵⁴

52 Department for Education, *Higher education policy statement & reform consultation*, 24 February 2022 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1057091/HE_reform_command-paper-web_version.pdf. UKRI, *New Deal for Postgraduate Research – Call for input*, 23 February 2022 <https://engagementhub.ukri.org/skills/new-deal-for-postgraduate-research-call-for-input/>

53 University Alliance, *REF 2021: Alliance universities 'taking great strides forwards' with world-leading research output*, 2022 <https://www.unialliance.ac.uk/poweringuk/powering-research-and-innovation/ref-2021-alliance-universities-taking-great-strides-forwards-with-world-leading-research-output/>

54 UK Parliament, *European Research Council*, vol.821: debated on Wednesday 27 April 2022 <https://hansard.parliament.uk/Lords/2022-04-27/debates/06F81547-DBD9-4259-92B8-B63D06420026/EuropeanResearchCouncil>

The Department for Education's higher education policy statement, released in February 2022, announced a further freeze in the tuition fee cap for undergraduates in England up to 2024/25 and the accompanying reform consultation proposed various measures to control the size and shape of the higher education sector as the Government grapples with the growing cost of the current system to the taxpayer.

To meet the local and global challenges we face, universities will need to maintain and increase their RDI capabilities, but this must be underpinned by a sustainable, long-term funding settlement. The longevity and scale of the higher education sector does not mean it can simply absorb the impact of real term cuts to the unit of resource and do more with less in perpetuity.

Closing shortly after the REF results came out, UKRI's call for input on a new deal for postgraduate research refers explicitly to a vital part of futureproofing the RDI ecosystem – a sustainable approach to developing highly qualified and skilled researchers and innovators.⁵⁵ Importantly, UKRI acknowledges upfront the impacts its policies have on the wider sector and the review seeks to utilise UKRI's convening power to ensure postgraduate research meets the needs of the entire system. This thorny issue was highlighted during the pandemic when guidance on extensions for UKRI-funded students was clear and swift but raised expectations across the sector.

The pandemic has also exacerbated concerns about the financial sustainability (for individuals and organisations) of all doctoral training in the UK, including UKRI training programmes, which commonly involve co-funded support

55 UKRI, *New Deal for Postgraduate Research – Call for Input*, 23 February 2022 <https://engagementhub.ukri.org/skills/new-deal-for-postgraduate-research-call-for-input/>

from the host research organisations and their industry partners.

Cost recovery on studentship training is still a significant issue for universities that can access multi-year block grants through UKRI's Research Councils, but the persistent over-concentration of postgraduate research funding means many research-active universities with diverse student cohorts receive little or no funding. The match-funding and threshold requirements for Doctoral Training Partnerships (DTPs) allows funding to go further, but also enables a continuous cycle of institutions with larger research budgets being able to access higher levels of funding.⁵⁶

In addition, there is still a focus on discipline-specific funding through DTPs, which is out of step with the growth in interdisciplinary research environments and persistent calls for more connectivity and collaboration across the system to improve problem-solving and optimise existing capacity.

A strong doctoral community is integral to the research capacity and culture of University Alliance universities so they, like many other universities, are therefore willing to use QR-funding and cross-subsidise to invest in postgraduate research. This includes a growing number of Professional Doctorate programmes, which are helping to address the doctoral access gap and improve porosity between academia and industry.

Cross-institutional cohort models of postgraduate training can be a vital means of providing a supportive environment for students and could be encouraged and supported further through the 'new deal'. In response to the over-concentration

⁵⁶ UKRI, *Doctoral Training Partnerships*, 2022 <https://www.ukri.org/what-we-offer/developing-people-and-skills/developing-people-and-skills-esrc/doctoral-training-partnerships/>

of funding, University Alliance universities sought to utilise this model outside of UKRI funding to develop their own critical mass, by establishing the Doctoral Training Alliance (DTA) in 2015.⁵⁷ It has since been expanded internationally through the DTA3 / COFUND programme, with the support of a €6.5 million grant from the Horizon 2020 Marie Skłodowska-Curie PhD Fellowship programme.⁵⁸

The DTA is a structured PhD training programme that supports four interdisciplinary, industry-focused research areas. Over 250 students have benefitted from the support provided by the DTA, which includes enhanced training programmes co-designed with employers and access to expertise and facilities across the network, all of which helps equip students with the skills they need to navigate the evolving landscape of PhD employability.

Participating partners have equal status within the consortia and co-ordination across all partners is provided by an independent team of professional staff based within University Alliance. The benefits are clear, but the pressures on these internally funded structures from squeezed budgets and competing demands is great.

As the dust settles on REF 2021, attention will now turn to budget allocations and exactly how the substantial proportion of world-leading and internationally excellent research will be rewarded through QR funding by the four UK funding bodies.⁵⁹ Throughout the rest of 2022 and beyond, sustainability will

57 University Alliance, *About DTA*, 2022 <https://www.unialliance.ac.uk/dta/about-dta/>

58 University Alliance, *DTA3 / COFUND Marie Skłodowska-Curie PhD Fellowship Programme*, 2022 <https://www.unialliance.ac.uk/dta/cofund/>

59 UKRI, *UKRI's three-year budget is confirmed*, 2022 <https://www.ukri.org/news/ukris-three-year-budget-is-confirmed/>

continue to be the watchword across many aspects of higher education and research policy.

9. REF 2028? Think Again

Professor Peter Mandler⁶⁰

I have been involved with successive national ‘research assessment’ exercises now for 30 years, as contributor to and author of institutional submissions and latterly as an assessor, a member of the national panel for History in the 2008 and 2014 exercises. I used to stand up for these exercises as, first, the least worst way to distribute limited government research funding across the wider range of universities that has emerged since the early 1990s, and, secondly, as a means of preserving the essential element of peer review in that assessment. The alternatives – metrics, non-expert views, criteria having little to do with the quality of research (the putative object of assessment) – did not bear thinking about. So, I was willing to put in literally months and months of work, collating colleagues’ work, writing long bureaucratic documents to increasingly baroque rules and reading hundreds and hundreds of books, chapters and articles.

Now, I’m not so sure. The ‘Research Excellence Framework’ (REF) as it is currently called is no longer all that much about excellence or even about research. In the most recent exercise direct assessment of research counts for only 60 per cent of the outcome; ‘environment’ (a bundle of measures of research culture) counts for 15 per cent; and ‘impact’ (an assessment of the reach and significance of research beyond academia) for 25 per cent. We are told after every exercise – and I suspect we will be told after this one – that ‘they’ (meaning the Business Department, which bosses the REF, and the Treasury, which bosses the Business Department) will insist on more for impact

⁶⁰ This chapter previously appeared on the HEPI website on 10 May 2022 <https://www.hepi.ac.uk/2022/05/10/ref-2028-think-again/>

'next time'. So it may transpire, and assessment of research will take a smaller share still.

Less assessment of research also means, by definition, less peer review. 'Impact' and 'environment' are assessed by academics, too, but assisted by 'impact assessors' from outside academia. A dirty secret of the assessment of impact and environment is that they are, again almost by definition, assessed much more sketchily and with much less evidence than is research. When I read a book, say of 300 pages, I am spending hours of my time and harnessing my whole career's expertise in evaluating it. That book would count for a medium-sized department for about 2 per cent of its department research submission and therefore just over 1 per cent of its final outcome (i.e. 60 per cent of 2 per cent). When I read an 'Impact Case Study', I am not allowed to consider anything external to that document, which runs to five pages. I do not have the same level of expertise to assess it that I do in reading the book, and even the impact assessor can only judge so much from five pages of claims, with again a narrowly specified level of evidence allowed to back them up. And yet that five-page Impact Case Study will count for about 6 per cent of the department's final outcome. How can we defend – either as peer review or even as a fair assessment – giving six times more weight (and six times the cash) for an Impact Case Study which takes minutes to evaluate (even with multiple evaluators), with limited evidence and expertise, than for the book which takes hours to evaluate, with enormous amounts of evidence and lifelong expertise? What started out as a Research Assessment Exercise has ended up as more of a public-relations assessment exercise, with largely rhetorical documents contributing more and more to the calculus.

(I do not even address here the injustice, specific to book-oriented disciplines like mine, of weighting a 300-page book which might have taken the lone author between five and 10 years to write as equal to two papers co-authored by up to 50 scientists, of which they might turn out a dozen or more annually.)

Research assessment is thus less and less about the assessment of research. It is also more and more about other things. Government wants it to have measurable 'impact', by definitions (to make it measurable) that inevitably only capture some of that; for example, if you switch institutions, there can be no impact based on work you did while employed at the previous institution. A lifetime of research disappears from the scope of the exercise. Government has also lately been piling on other *desiderata*; for example, by excluding from assessment work that does not appear in approved forms of 'open access'. 'Poof' again.

More widely, universities are using the exercise for their own purposes, sometimes very far from the assessment of excellence. Mock REF exercises and REF-generated metrics are used to evaluate staff for hiring (and firing) and promotion, even by universities that are signed up to the Declaration on Research Assessment (DORA) which explicitly repudiates the use of such metrics. If REF were just peer review, that might be unobjectionable – peer review is the correct way to assess research performance. But REF as deployed internally by universities is often very far from peer review. It may be handed over to a single non-specialist evaluating an entire department. It is often liberally reinterpreted to suit managerial prerogatives. On occasion a senior manager (usually a scientist) has told me, 'I did not understand' how the

History REF worked, by which he meant (usually he is a he) that I did not understand how he used it.

Worst of all, the REF has become an enormous bureaucratic nightmare – a steam-powered jackhammer to crack a nut. Each new iteration takes the existing template and adds more levels of complexity and direction. Just between the 2008 and 2014 exercises the costs were estimated to have risen fourfold, from £66 million to £246 million. Such costs are usually justified in terms of the much larger sum being disbursed. But cost comes not only in pounds and pence. The REF now looms over the daily lives of institutions and individuals like a massive headache, insinuating itself in places where it does not belong, dampening initiative and originality, and replacing the object of desire (good research) with its proxy.

The time is ripe for a root-and-branch reconsideration. Rip up the rulebook and start again. Think seriously about whether, as is often suggested, a simple headcount might lead to rough justice without the thousands of pages of boilerplate and the hundreds of meetings and exercises. And get back to basics. Anything worthy of the name ‘research excellence’ has to put excellent research, not a lengthening government or managerial wish-list, at its heart.

10. If metrics are the answer, can we agree on the question?

Professor James Wilsdon

Seven years ago, a roomful of research movers and shakers assembled on the top floor of the Wellcome Trust in London for the launch of *The Metric Tide*, the independent review of the role of metrics in research assessment that I chaired on behalf of Hefce.⁶¹ We were waiting for the release of a review of the research landscape by Sir Paul Nurse.⁶² Uncertainty swirled around the long-term future of the UK's research links to the rest of Europe. *Plus ça change*.

If some things do not seem to have moved much in seven years, does the same inertia apply to research metrics? What developments have there been in indicators, infrastructures and methodologies? And with various options for reforming the Research Excellence Framework (REF) now on the table, could metrics play a bigger role?⁶³ These are among the questions that Stephen Curry, Elizabeth Gadd and I have been asked to consider for *The Metric Tide Revisited*, a short, sharp look back at the conclusions of our 2015 review, and towards the shape of whatever REF comes next.⁶⁴

61 Research England, *The metric tide: review of metrics in research assessment*, 6 July 2015 <https://www.ukri.org/publications/review-of-metrics-in-research-assessment-and-management/>

62 Department for Business, Innovation & Skills, *Nurse review of research councils: recommendations*, 19 November 2015 <https://www.gov.uk/government/publications/nurse-review-of-research-councils-recommendations>

63 Jisc, *Future Research Assessment Programme* <https://www.jisc.ac.uk/future-research-assessment-programme>

64 UKRI, *Reviewing the role of metrics in research assessment*, 17 May 2022 <https://www.ukri.org/news/reviewing-the-role-of-metrics-in-research-assessment/>

As we saw after RAE 2008 and REF 2014, some in the sector are calling for a move to a metric-based assessment framework.⁶⁵ This chorus will likely intensify when we get a number for the ‘full cost’ of REF 2021 in a few weeks’ time – particularly if it exceeds the £250 million bill estimated last time around.⁶⁶

It is possible that a new administration, focused on efficiency gains from rolling back the state (perhaps spurred on by the final report of the Tickell *Review of Research Bureaucracy?*) will seize upon metricising the REF as an easy win.⁶⁷ But until recent upheavals in government, it has been striking how little political engagement there has been since 2015 with the design and operation of the REF. Compared to the amount of political and policy time spent on the new Advanced Research and Invention Agency (ARIA), with its relatively puny £200 million annual budget, the REF (the mechanism through which government allocates many times as much each year in Quality Related funding) goes through on the nod.

The exception was the speech of the then Minister for Science, Research and Innovation, Amanda Solloway, to the 2020 HEPI / Elsevier conference on ‘The Research Landscape’, which fired the starting pistol on the current Future of Research Assessment Programme.⁶⁸ Yet far from embracing metrics, Solloway seemed to class them as part of the ‘risk-averse

65 UKRI, *Reviewing the role of metrics in research assessment*, 17 May 2022 <https://www.ukri.org/news/reviewing-the-role-of-metrics-in-research-assessment/>

66 Holly Else, ‘REF 2014 cost almost £250 million’, *Times Higher Education*, 13 July 2015 <https://www.timeshighereducation.com/news/ref-2014-cost-250-million>

67 Department for Business, Energy & Industrial Strategy, *Review of research bureaucracy: terms of reference*, 12 January 2022 <https://www.gov.uk/government/publications/review-of-research-bureaucracy/review-of-research-bureaucracy-terms-of-reference>

68 Department for Business, Energy & Industrial Strategy, *Science Minister on ‘The Research Landscape’*, 20 October 2020 <https://www.gov.uk/government/speeches/science-minister-on-the-research-landscape>

compliance culture ... stifling creativity and diversity' that she wanted to see the back of.

So we go into early skirmishes over the next REF with relatively little pressure – top-down or bottom-up – for metric magic bullets to be fired at the existing machinery of panel-based review and narrative Impact Case Studies. A fascinating study commissioned by Research England from Professor Mike Thelwall on uses of machine learning in a future REF, expected in the autumn, seems equally unlikely to pose this as a simple solution.⁶⁹

Through a rather hazy, rear-view mirror, our 2015 review is perhaps remembered for two things: introducing the concept of 'responsible metrics'; and opposing the move to a metric-based REF. Its message was actually more nuanced: as I wrote in the original Foreword, 'Metrics hold real power; they are constitutive of values, identities and livelihoods. How to exercise that power to positive ends is the focus of *The Metric Tide*'.

This remains the case. Like any social technology, research indicators and metrics can be directed to good or bad ends. They can be used to enrich and pluralise, or to narrow and impoverish. They can be tools of empowerment and agency, or surveillance and control.

Before hurtling into the next REF, the question we need to answer is not: 'are metrics a better way of assessing research?' Instead, as others have argued, we need to start by revisiting and clarifying what the REF is for. Its stated purposes have multiplied in recent years. The Stern review mentioned six:

69 See <https://researchers.wlv.ac.uk/M.Thelwall>

- i. to inform the allocation of funding;
- ii. to provide an evidence base for informing strategic decisions on research;
- iii. to ensure accountability, thereby boosting the case for future investment;
- iv. to act as a performance incentive for institutions and academics;
- v. to inform institutions' own decisions on resource allocation; and
- vi. to provide a regularly updated benchmark, based on peer review.

To these, some people now want to add more, such as incentivising improvements in research culture. Can a single assessment framework deliver on six, seven or eight simultaneous objectives? What hierarchy of importance should be applied to these? What happens when they are in tension?

These are some of the fundamental questions that the FRAP process needs to answer. Then, and only then, can we have a sensible discussion about design options, and the role of metrics as a methodology to deliver them.

11. Passing on the baton

David Sweeney CBE

Thanks to all those who have set out their perceptions of the Research Excellence Framework and research assessment more generally. So much discussion on this subject happens 'Twitter-style', where the medium does not allow the presentation of evidence to back up assertion, and where fragmented discourse is the enemy of coherent argument. These pieces present reasoned cases and, taken together, form a considerable contribution to the current discussion.

If there is a weakness it is that the pieces argue for a scheme which addresses particular issues whereas those designing the future system have to consider how to balance all those issues and prioritise the objectives. This piece attempts to pull together different perspectives around a set of essential research assessment questions.

What are the core purposes of the REF?

In any policy debate it is important to consider the objectives of the exercise. Lord Stern's report, always worth a re-read, sets out six purposes. It may well be that some will come to be seen as of lesser importance or deliver insufficient value. Some purposes may best be addressed by other levers and over-crowding the REF with objectives does risk diluting the core purposes. Any rethink has to be done against a refreshed understanding of the purpose. Such a rethink needs also to fully appreciate the perspectives of governments, universities, research partners and staff in all four countries of the United Kingdom.

However, there are two core purposes which Nick Hillman takes head on. Primarily REF is the accountability measure

for a very substantial amount of money, at least £15 billion of direct public funding over the cycle. The governments have accepted an instrument which functions once every seven years, falls back on a significant element of judgement from the beneficiaries of the public funding and works at an appropriately aggregated level of detail. All of the governments have accepted REF as a mechanism for awarding funds, and as then demonstrating that the public investment is well-targeted. Indeed the level of accountability for other elements of R&D funding ('tell me how every pound on that grant will be spent') is far greater and comes with significant constraints over allowable expenses. As Nick says, 'there are no strings attached to the QR funding that flows from the REF', a considerable bulwark, along with a carefully-worded Higher Education and Research Act (2017), against the external management of research directions. In turn, institutions balance a driver to discover new knowledge with, working with partners, a driver to deliver societal impact from that public funding.

I would join Nick in cautioning against a discussion which veers towards the entitlement of the academy to receive public funding. I would also caution against rejection of a co-created single national system, bearing in mind the alternative of an intrusive granular approach to QR accountability ('just tell me exactly what you spent QR on and what the results were?'). Such an approach could be attractive to those who may think that some university directions do not align well with particular external current preferences and who may also be less enthusiastic about the importance of diversity in research directions.

What has the REF achieved and is there micro-management in universities?

Bahram sets out some ways in which REF has contributed to our country having a strong R&D system – the platform which we can build on, so as to be seen by both competitor and partner countries as a science super-power. However it may well be, as suggested in several of these pieces, that REF encourages internal university evaluation systems which are ‘intricate and complex’. Indeed ministers (no doubt well-briefed) have commented about overblown ‘shadow REFs’. A debate about internal university systems, recognising the responsibility given to universities in deploying REF-related funding, could complement the Future Research Assessment Programme, and provide a way of better informing national directions from best local practices. Equally attention is needed to identify where unnecessary internal processes may not deliver value in an overarching national framework. Some comparison of internal university systems, in those delivering strong REF outcomes against those who have less success, could help in both local and national assessment of potential and outcomes.

Does the REF recognise the right things?

Nick questions whether the exercise appropriately recognises some forms of activity, notably various HEPI outputs. That HEPI activity certainly is valuable and Research England has indicated so by continuing direct support of HEPI. In fact HEPI outputs could indeed be submitted, provided they meet the definition of research which REF uses. However, REF is about accountability for publicly funded research and so it is reasonable to accept that the governments may give appropriate high-level steers on the criteria to be used to justify public funding (though not, as defended above, the detailed

activity which benefits from that funding). Governments do set out high-level directions on research funding and those directions are captured in the REF criteria. I read many assertions about what should be more valued or less valued in the assessment of research quality and it is certainly good to have that debate, particularly at present on the nature of local impacts. That debate informs governments but ultimately the governments' views have to be respected if public funding is to be accepted.

Following those government steers, particularly on the recognition, assessment and reward of impact, Peter Mandler suggests the REF has drifted away from his conception of research and excellence – though I know others think that it has not gone far enough. He is still suspicious of impact and while that is of immense importance to the government (or our 'bosses' as he says) he may be reassured that our governments still believe in supporting world-leading research including that which delivers Nobel prizes. His expression of that very suspicion could reinforce perceptions of some in government that universities are not really committed to the fruits of that research being exploited by university partners. And pejorative language as Peter uses ('dirty secrets') is not helpful when it is as transparent as it could be that an Impact Case Study, at five pages, is describing something different from a *magnum opus*. Another way of looking at it is that I suspect Peter does not write a *magnum opus* specifically for the REF but rather to set out insights and inspiration for readers – and the REF requires his institution to do nothing more than identify the output. Short Impact Case Studies are an attempt at an additional but appropriate burden to indicate that indeed some of our research changes lives and our society.

He strays into overstatement too in talking about 'measurable' impact as the exercise is notably hostile to metric attempts at impact, trusting wholly to the judgement of those who develop the ideas and those who take them forward in practice. The REF does assessment of relative impact based on expert judgement.

What should happen next? How should the discussion be framed?

Bahram's considerable contribution provides compelling evidence of the benefit of the exercise but he ends with a call for a fundamental rethink. I agree, but emphatically not for his primary reason – 'increasing contortions to use REF results in a way that protects the funding of the strongest research universities, causing angst and upset among those who have improved their quality but whose funding has not increased to match'. The funding decisions have always focussed on those who have above-average increases in quality and volume and the whole process is very much simpler than outside observers believe, and particularly so in this current year.

No, my reason for fundamental rethink is that we are thinking, world-wide, about how we understand the working of the research system, about research culture, incentives, rewards and success criteria. The UK should play a full part in that debate which has some way to go and, as more settled positions emerge, capture the learning in the way we design our assessment exercise. There is a timing element in this. It may be that the UK wants to alight in the next few months on modest modifications which can be implemented quickly for the next (perhaps shorter) cycle allowing time to engage in international debate and take measured decisions for assessment in the following cycle. Or it may be that it is worth

taking slightly longer now, perhaps a couple of years, to complete a fundamental rethink for this cycle.

What about the separation of education and research?

There is one area where Nick's authoritative analysis does need challenge. He laments the separation of education and research issues by government (although this is very much an 'England position'). Although this is indeed so, it remains that the Higher Education and Research Act (2017) clearly directs unhypothecated public funding to those institutions which accept various government constraints and commit to bearing a clear responsibility to their communities, regions and the nation. That 'compact' is about the over-arching mission of an institution whereas the allocation of particular sums of money given for specific purposes (project funding) does not require such a commitment. As far as underpinning funding from Research England is concerned the education / research link remains fundamentally intact. Some may think it is desirable to change that position but it is a matter for legislation, and therefore a national discussion, not a matter for the machinery of government.

Research assessment and culture

Consideration of 'Research Environment' has been a consistent feature of the exercise with different mechanisms tried and some progress duly made. However, the scale of the research culture challenge and the focus now being given by international discussions suggest that there is widespread support for a much stronger emphasis on recognising and rewarding desirable attributes of the research system. Whatever the nature of the new mechanisms, it is a significant challenge to capture sufficient rigour and richness in the assessment of

research environment and, as I perceive it, this is the key issue in considering future research assessment. The move from theorising about research culture to delivery mechanisms is challenging and it is simply insufficient to say, as one change proponent was quoted recently, that 'there must be a way of doing it'. That is the last refuge of an official trying to rescue a failing policy implementation and it is a pitfall which the academy must confront and address. And while I have talked about 'the academy' here there also needs to be discussion about who is inside that academy. Our research teams now include experts with a range of professional responsibilities, whether they be technicians, statisticians, librarians, research managers and so on. In considering research assessment the work of those teams should be assessed appropriately, not just the outputs which bear the names of the principal investigators and some colleagues. These discussions are less well-developed in the theory and even further from a delivery mechanism.

Research assessment and consequent funding

Helen Carasso describes the history well and then moves into a discussion about the funding resulting from research assessment. I do not accept that research assessment naturally leads to research concentration and on several occasions (including 2022 in England) the outputs of the REF have led to less concentration. There are policy choices about 'fewer and bigger' as against 'more and better distributed' and research assessment provides evidence to help with implementing the policy choice. More fundamentally, I understand and appreciate the views of those who feel that performance-based funding is not the best model for a research system, even though to a lesser or greater extent it is the dynamic in

most countries. It is also embedded in the project grant side of research funding, but there based on the anticipation of future performance rather than evidence of past performance. Its desirability is a matter for general debate beyond an accountability instrument. It is reasonable to have that debate but also to recognise that this is an area where elected governments are entitled to take decisions about methods for the distribution of public funds.

Nor are all Helen's summative statements resilient under challenge. Many institutions became eligible for research funding after 1992. Some have achieved significant success – witness the press coverage following the most recent exercise and look at the funding changes just announced in England. So 'increased stratification' may not be quite right, as Diana Beech also indicates, and the general argument she makes depends on your views about the appropriate structure for research systems. A debate about that is healthy and will significantly impact thinking about what should be assessed.

So long and thanks for...

I remember the 2001 RAE results being announced and since then have been largely engaged in assessment exercises from both the university side and the funding agency side, as well as very substantial international engagement. I am particularly grateful to Bahram, and to my immediate predecessor Rama Thirunamachandram who left me a fine legacy to take forward, along with much wise advice. Rama then stepped back and I will now do the same, wishing Dame Jessica Corner and colleagues in England, Scotland, Northern Ireland and Wales all the best as they take research assessment and funding forward in new and different ways.

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