

Summary

- The UK research base delivers world-class performance at an unparalleled level of efficiency, demonstrating the strength of the funding system which underpins the sector. This success was recognised in the Spending Review which protected science spending in real terms. It is now important to clarify the machinery which can most efficiently deliver this resource.
- Recent announcements raise the prospect of major structural changes in research funding in the coming years. We anticipate major disruption as a result of this process, and it is vital that Government consults with the sector through this period of change to minimise damage to the UK's world-leading science base while maximising the potential benefits of greater inter-disciplinary coordination and administrative savings.
- The UK benefits from a funding architecture which includes sector-specific bodies and balances competitive awards and block grants to institutions. Under the new Research UK architecture, Research Councils should retain separate, stable and substantial budgets, coupled with the autonomy to act in response to challenges and opportunities within their sector. The balance of authority within this new structure will greatly influence the ability to attract high-calibre individuals to key roles in the Research Councils, particularly at the most senior level.
- The potential delivery of dual-funding functions through a single organisation must be seen to provide tangible benefits to the sector, and avoid violating the fundamental purpose of separate funding streams. Consideration must be given to appropriate mechanisms to insulate these functions and to protect vital funding streams such as the Charity Research Support Fund that leverages considerable research funding from medical research charities and others.
- REF2014 showcased UK research to the public and policy-makers, and built an evidence base for spending decisions. Streamlining the process would be welcomed, but this should protect the value delivered by many of the newly strengthened features, such as the impact element.
- Greater deployment of metrics may contribute to streamlining the REF, but the cost-benefit of such a change must be fully understood. Improved data infrastructure may help reduce the assessment burden, as well as improving the strategic agility of funders.

Introduction

The Academy of Medical Sciences promotes advances in medical science, and campaigns to ensure that these are translated into healthcare benefits for society. Our elected Fellowship includes the UK's foremost experts drawn from a broad and diverse range of research areas.

We welcome the opportunity to respond to 'Fulfilling our potential: teaching excellence, social mobility and student choice', a Green Paper prepared by the Minister for Universities and Science.¹ This sets out proposals relating to the architecture of the research funding, and the future of the Research Excellence Framework. The Academy has taken this opportunity to reflect on proposals set out in the Green Paper, and to respond to the outcomes of the recent Nurse Review of the Research Councils, and announcements made in the Spending Review 2015.^{2,3}

¹ Fulfilling our potential: teaching excellence, social mobility and student choice (2015) BIS

² Nurse Review of the Research Councils (2015) BIS

³ www.gov.uk/government/publications/spending-review-and-autumn-statement-2015-documents

Our responses have been informed by the expertise of our Fellows, many of whom are recipients of Research Council funding, or have been directly involved in the operation of particular Councils. We would welcome further opportunities for dialogue on this issue as it develops.

Q24. In light of the proposed changes to the institutional framework for higher education, and the forthcoming Nurse Review, what are your views on the future design of the institutional research landscape?

The Academy broadly welcomed the Chancellor's decision in the Spending Review to protect, in real terms, science spending over this Parliament.⁴ This new trajectory provides the stability needed to tackle the challenges ahead. The deployment of Overseas Development Aid (ODA) into research opens up new opportunities – mobilising UK research expertise to tackle challenges faced by developing nations, and lending greater global perspective to the UK community. However, with new opportunities come new responsibilities, and it is vital these additional funds are utilised effectively and distributed via transparent funding mechanisms.

With funding now secured, it is essential that the machinery to efficiently disburse this resource, and deliver impact for society, is defined and operational. Alongside financial security, the Spending Review also protected the components of the ecosystem – retaining seven distinct Research Councils and Innovate UK. We were also pleased to see support for other elements of the wider ecosystem, including the National Institute for Health Research.

However, the implementation of the Nurse Review recommendations and proposals on the future of the Higher Education Funding Council for England (HEFCE) will result in substantial changes to the architecture of research funding within England, and the wider UK. Careful consideration must be given to how the elements of the ecosystem can best operate together to minimise disruption for researchers, and continue to deliver world-leading research impacts.

Underlying Principles

Measured across a broad range of metrics, the UK research base delivers world-class performance at an unparalleled level of efficiency.⁵ This success demonstrates the strength of the funding system which underpins the sector, and any changes to this landscape should seek to retain the principles and broad delivery mechanisms which have supported such high performance.

The UK model of research funding is unusual in providing a balanced mix of competitive awards (through Research Councils) and long-term support (through Quality-related Research allocations). This balance has successfully fostered a cluster of elite institutions and, crucially, supported a disproportionate number of high-performing institutions beyond the Top 10 global universities.⁶

The UK's broad disciplinary strengths have been built on a diverse ecosystem of funders able to nurture specific sectors. Changes which seek to condense this landscape should retain the balance of expertise across disciplines, and allow emerging fields to find a space. This diversity is a strength, but access to these resources should remain straightforward, following the recommendation in Dame Ann Dowling's recent report to 'hide the wiring' from users.⁷

⁴ www.acmedsci.ac.uk/more/news/academy-responds-to-the-spending-review-2015/

⁵ International comparative performance of the UK research base (2013) BIS

⁶ See: QS World University Rankings, and Times Higher Education World University Rankings

⁷ The Dowling Review of business-university research collaborations (2015) BIS

The Green Paper rightly acknowledges that 'research and teaching should be recognised as mutually reinforcing activities' and Fellows feel that any structural changes should recognise the value of research-led teaching as discussed further in our report, 'Redressing the balance: the status and valuation of teaching in academic careers'.⁸ Any separation of the support functions for teaching and research at a policy level should not undermine their relationship within institutions.

Research Councils

The recommendations of the Nurse Review, which the Chancellor has subsequently accepted, are to replace Research Councils UK with Research UK (RUK), a body with increased financial resources and responsibilities. The Academy recognises the need for, and benefits of, greater interdisciplinary coordination to tackle major societal challenges, a topic which has been a focus for the forthcoming Academy report on 'Health of the Public in 2040'.⁹ The creation of RUK must serve to enhance these functions rather than create additional administrative barriers. The Academy welcomes Sir Paul's recognition of the value of sector-specific Research Councils (RCs), and thinks it crucial that the overarching RUK body does not erode these individual strengths.

We are concerned about the impact of the proposed changes on the autonomy of RCs and their CEOs, and we anticipate major disruption to the science base as a result of this restructuring. The process of change may result in the loss of key RC staff and a diminished calibre of applicants for senior positions within RCs. Careful consideration must be given to the impact of removing the ability of RCs to directly employ researchers, both in the UK and overseas, as this might reduce agility within the system and diminish the capacity for a rapid response to emerging threats and opportunities. There are also specific concerns in relation to employment rights, for example the lack of a secure local research infrastructure means that staff at MRC's Gambia Unit could not easily be transferred to local universities.

It is vital that the responsibilities of RUK are carefully calibrated, to empower and facilitate researchers and RCs to work better together, without creating new sources of uncertainty and administrative burden. Research Councils should retain separate, stable and substantial budgets, coupled with the autonomy to act in response to challenges and opportunities within their sector. Lessons may be drawn from corporate examples. One attractive model might be RUK acting as a 'holding company' for a cluster of subsidiary RCs, adding value through governance and shared values without disrupting existing, productive collaborations between RCs and their communities.

The proposed Ministerial Committee could provide research with a stronger voice in Government, but this conduit would be bi-directional and safeguards would be needed to ensure that funding decisions continue to follow Haldane Principles.

These structural reorganisations are likely to require changes to primary legislation, creating a period of uncertainty which may span several years. Government must recognise the need for a financial settlement covering this intervening period, which empowers existing structures to continue their work, but retains the flexibility for a smooth transition to new structures.

QR functions

The Academy welcomes the ongoing support for dual-funding, and we continue to believe that this system has served the community well by providing institutional QR allocations to strategically use alongside competitively-won RC, charitable and industry funding. However, the Green Paper

⁸ www.acmedsci.ac.uk/policy/policy-projects/redressing-the-balance-the-status-and-valuation-of-teaching-in-academic-careers/

⁹ www.acmedsci.ac.uk/policy/policy-projects/health-of-the-public-in-2040/

proposes uncoupling HEFCE's teaching and research QR functions, and potentially relocating the research functions under RUK. Such a move could introduce a further degree of uncertainty and disruption within a highly successful sector, and this is discussed further under Question 25.

Innovation

The Academy welcomes the retention of Innovate UK (IUK), alongside the Catapult Network, as important components of the research and innovation pipeline. However, concerns remain over how IUK would operate effectively from within RUK, and it will be important to fully understand the differences between the RC communities, and those accessing innovation support functions. The long-term implications of converting a proportion of IUK grants into loan-based financial instruments remains unclear, and consideration will need to be given to how the risk profiles of funding bodies will align with the wider investment landscape.

Q25 a) What safeguards would you want to see in place in the event that dual funding was operated within a single organisation? b) Would you favour a degree of hypothecation to ensure that dual funding streams, along with their distinctive characteristics, could not be changed by that organisation?

The primary question must be whether the co-location of dual-funding functions provides tangible benefits to the sector, as the current system continues to deliver strong results. Possible benefits from unification might include improved coordination between the deployment of capital and resource spending, and reduced administrative costs. However, if unification poses a threat to the underlying principles of dual-support, without a substantial reward, then any minor cost-savings may be rapidly outweighed by the robust processes needed to separate the two functions within a single body.

Operating with a dual set of objectives, and the internal oversight this would require, could hinder the ability of RUK to evolve to address changes in the research landscape. A high level of transparency would be needed throughout all processes to support ongoing scrutiny, and safeguards would be required to protect the responsibility of RCs to fund UK-wide, versus the remit of QR functions operating across England alone. Further clarity is needed on the implications for these devolved activities, and how the allocation methodologies would align with any new UK-wide structures. We would also urge greater clarity on the protection of the Charity Research Support Fund, which operates from within QR functions to support and leverage the vital investment made by charitable organisations.

Q26. What are the benefits of the REF to a) your institution and b) to the wider sector? How can we ensure they are preserved?

We believe that that REF2014 was a successful showcase of UK excellence, and a significant step forward from previous exercises. The assessment provided a timely audit of the UK research base, highlighting key examples of excellence and impact which have been a vital asset to demonstrate the return on research investment to the public and decision-makers. The Academy looks forward to contributing, in more depth, to the recently launched review of the REF, and welcomes the inclusion of Professor Sir John Tooke FMedSci on the high-level steering group.¹⁰

¹⁰ www.gov.uk/government/news/government-launches-review-to-improve-university-research-funding

Researcher selection

The responsibility for selecting researchers for assessment was devolved to institutions, and this may have distorted outcomes. An alternative approach, which would still limit administrative burden, might be to employ a fractional sampling method across all research-active individuals. This would also help address reports of individuals being 'parachuted in' on part-time contracts immediately prior to the REF, as a method of strengthening outputs. An appropriate method of sampling might reduce these perverse incentives and improve the quality of the data collected.

Attribution

The approach to attribution taken by REF2014 represented progress against previous exercises, but future assessments need to better capture, and therefore promote, inter-disciplinary, inter-institutional and 'Team Science' endeavours. Many points relevant to this debate will be discussed in the Academy's forthcoming report on Team Science.¹¹ Greater effort must be made to appropriately attribute contribution, especially in fields where large teams are commonplace, and assessment procedures must better account for commercial activities undertaken by researchers.

Assessment criteria

The inclusion of 'impact' among REF2014 criteria marked the first time that such a comprehensive assessment of the economic and social impact of University research had been undertaken. The detailed and qualitative nature of this assessment created additional burden for Universities, but Fellows felt it has driven a culture change at an institutional level that is broadly positive. The Case Studies generated for submission have demonstrated ongoing value to host institutions as a resource which highlights the direct societal value of research, and represents a major asset for showcasing UK science and building an evidence base for spending decisions.

Individual staff circumstances

A greater emphasis was placed on accounting for individual staff circumstances in the recent exercise, allowing outputs to be scaled accordingly. This raised the profile of early career researchers, part-time workers and those who have had career breaks, and alongside programmes such as ATHENA SWAN, it has incentivised the creation of a more equitable workforce in Universities. It is important that REF continues to capture the contribution of a broader selection of the research community, to more closely reflect the composition of the modern workforce and champion the diversity agenda promoted by Government and others.

Timeline

It is important that the periodic nature of REF does not drive cyclical, detrimental behaviours in Universities, and the demand for impact in the short-term must not be allowed to compromise the operation of research across longer-term horizons.

Q27. How would you suggest the burden of REF exercises is reduced?

The financial burden of REF2014 was considerable – the total cost has been estimated at £246m, comprising £232m of cost to the higher education community, and £14m to the four devolved QR funding bodies.¹² This represents approximately 2.4% of the total funds disbursed on the basis of REF outcomes, and seems proportionate to the important role of these audits in allocating QR funds and the contribution this makes to the overall efficiency of the UK research base.

¹¹ www.acmedsci.ac.uk/policy/policy-projects/team-science/

¹² REF Accountability Review: Costs, benefits and burden (2015)

A proportion of the increased costs of REF2014 are attributable to the inclusion of more resource-intensive assessment criteria, notably the evaluation of impact and the accounting for individual staff circumstances. Both of these features have demonstrated their value – impact data has helped raise the community’s profile in the minds of the public and policy-makers, whilst capturing staff circumstances has raised the profile of a broader selection of researchers.

Whilst streamlining is an important, ongoing process, it should be done in a manner which protects the value delivered by these newly strengthened features. Suggestions have been made for greater use of metrics, particularly for the ‘output’ and ‘environment’ assessment streams, which may be readily extracted from existing data sources. It is important to understand the limitations of such an approach, with a recent independent report noting that metrics are unlikely to ‘provide a like-for-like replacement for REF peer review’.¹³ Cost savings are likely to be smaller than hoped, with some informal analysis suggesting savings of around £45m when the additional costs of metric generation and management are accounted for.¹⁴

Q28. How could the data infrastructure underpinning research information management be improved?

At a time when the research community is, itself, developing capacity to collect and utilise ‘big data’, it is vital that the management systems underpinning research do the same. Those engaged in research management should ensure that the roll-out of wider information capture is done in parallel with a developed ability to use this data to achieve its objectives.

If correctly harnessed, improved data infrastructure offers a chance to improve agility, and develop strategy at a more granular level. Institutions themselves are collecting increasing amounts of data on their own research activities and impact, including on research students and their career paths. There may be great potential in tapping into these data sources to inform assessments, and there should be ongoing engagement with the sector on this issue.

Several Fellows felt that the deletion of the raw data from the REF2014 process represented a significant missed opportunity for longer-term analysis. Future exercises may wish to revisit this approach to ensure that maximum value is derived from this asset.

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¹³ The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management (2015)

¹⁴ Move to metrics may not bring significant savings to REF bill (2016) Times Higher Education