

Nurse Review of Research Councils

University Alliance Response, April 2015

Introduction

1. University Alliance is a non-partisan, non-political organisation working to promote, safeguard and sustain the public benefit delivered by universities. We are pleased to contribute to this important review of the Research Councils.

Key recommendations

- The dual support funding system is essential to the health and dynamism of the research and innovation ecosystem and must be retained.
- Research Councils must fund excellence wherever it is found, as determined through a competitive process. Some existing mechanisms (often used for cost-saving reasons), such as working with priority institutions and using rear-view algorithms or restricted lists to allocate funds, are uncompetitive and need to be addressed.
- Research impact will be achieved best by involving all parts of the research and innovation eco-system in assessment and competition.
- Collaboration is essential and should be incentivised through:
 - Thematic (interdisciplinary) network-based competitive funding programmes
 - Recognising the contributions of collaborators such as co-investigators
 - Registering information about 'pass through' funds to collaborating partners
- Representation on peer review panels should be broadened to embed expertise in research impact and interdisciplinary research further in assessment processes.
- Barriers to the leverage of private funding should be removed by abolishing the practice of funding restricted lists of universities.
- Joint funding calls with other funding bodies and organisations using standardised openly competitive assessment criteria should be encouraged.
- Better communication and engagement is necessary between the Research Councils and the national ecosystem of research and innovation, but is resource-intensive. Research Councils should make use of the networks of consortia groups like University Alliance to help share the burden of liaison and enable Research Councils to reach more of the research base.
- A standardised communication process should be used to alert all potential applicants to funding opportunities at the same time.
- Research Councils should support consortia of universities to deliver doctoral training.

Strategic decision-making

2. The Research Councils fit within the wider dual support mechanism for research. QR funding has allowed for the development of areas of strength across the whole spectrum of research areas, including those that are emerging or are otherwise high-risk. This, together with the funding that flows through Research Councils supports an enviably dynamic and responsive system. Despite real-term decreases and extensive back-office cuts over the past six years the UK system has supported growth in research quality – and this has been recognised internationally.¹ This system is essential to the health of the research and innovation ecosystem and must be retained.
3. Research Councils have to ensure that research outputs meet national needs whilst also supporting investigator-led, exploratory research. In our view, Research Councils have largely been effective in maintaining an appropriate balance. The cross-cutting themes respond to national challenges while investigator-led funding, approved by peer review, allows the system to respond to emerging research opportunities. This approach ensures that the academic community directs the research agenda and that this remains competitive and dynamic.
4. Nevertheless, we do think there is some room for improvement – specifically in relation to ensuring that research funding is allocated on the basis of genuinely open competition in all but exceptional circumstances.

Research impact will be best achieved by involving all parts of the research and innovation eco-system

5. There is increasing recognition that some research funds should be used for research that generates economic and social impact (while others should support research where it is not possible to predict the impact from the beginning). Where there is an explicit commitment to target funds at research that will generate impact, it is important that there is a proper competition for these funds. But this is not always the case. For example, Impact Acceleration Accounts (IAAs) – block grants for the generation of research impact – have in many cases been allocated on the basis of historic funding revenues, rather than through open competition.

¹ As shown by the recent in-depth audit of UK research in REF 2014
<http://www.ref.ac.uk/results/analysis/comparisonwith2008raeresults/> [Accessed March 2015]

6. Allocating funds in this way fails to recognise parts of the sector which conduct research with real applied impact, but which may have been less successful in obtaining research council funding in the past – perhaps because of their size. As KCL and Digital Science found, ‘small institutions make a disproportionate impact contribution, and to a larger number of topics, than larger institutions’.² We urge Research Councils to fund in a way that recognises that a wide range of institutions and research activities can be excellent and deliver impact. This includes broadening the representation on peer review panels to ensure researchers with experience of generating impact and applied research are involved in the assessments of quality.

Recommendations: Strategic decision making

- The dual support funding system is essential to the health of the research and innovation ecosystem and must be retained
- Research Councils must fund excellence wherever it is found, as determined through a competitive process.
- Existing mechanisms that are uncompetitive, such as working and communicating with priority institutions and using closed competitions to allocate funds, need to be addressed
- Research impact will be achieved best by involving all parts of the research and innovation eco-system in assessment and competition

² King’s College London and Digital Science, *The Nature, Scale and Beneficiaries of Research Impact: An Initial Analysis of Research Excellence Framework (REF) 2014 Impact Case Studies*, 2015 p. 71.

Collaborations and partnerships

Research Councils should further incentivise collaboration between researchers

7. In our recent report *Evolve. Connect. Succeed*,³ University Alliance argued that connectivity and collaboration should be at the heart of the research and innovation eco-system, as this supports the development of peaks of excellence and offers cost efficiency benefits. We welcome the government's request for HEFCE to work with Research Councils and other partners to recognise institutions that collaborate.⁴ We suggest further ways in which collaboration can be encouraged below.
8. **Increase network funding opportunities:** Thematic network grants bring together diverse universities in novel ways, and are considered to be highly successful and good value for money. Opportunities that demand new, rather than existing, collaborations could be prioritised in the future. Sand pit events aimed at promoting partnerships between dissimilar institutions could also bring added value to the UK research ecosystem, and RCUK should continue to bring together interdisciplinary groups of researchers and encourage them with seed funding.
9. Research Councils should also **encourage multi-institutional learning environments** for PhD students by supporting collaborative doctoral training schemes.
10. **Recognise collaborators including co-investigators as well as principal investigators:** Recognising co-investigators and their home institution as well as principal investigators in funding audits would recognise and incentivise these activities. The AHRC are leading the way in this. All Research Councils should follow suit.
11. **Track 'pass through' funds:** Universities recognise that they have different strengths. In many cases, holders of large grants choose to work with partners which have complementary skills and can better deliver particular elements of a project. For example, in delivering part of a large multi-million pound IAA, Oxford University has allocated some of the money to Oxford Brookes University, who they recognised to be better placed to deliver particular impacts. However, information relating to transference of funds is not routinely collected by the Research Councils. This means that collaboration is not incentivised. It also means that any funding mechanisms reliant on algorithms of previous award levels do not accurately reflect where these public funds were spent.
12. **Address disincentives for interdisciplinary collaboration:** Interdisciplinary collaborations often prove to be the most innovative.⁵ Within individual Research Councils multidisciplinary bids are welcomed and a mechanism exists to share costs between councils. The AHRC in particular is supportive of interdisciplinary research, but its small budget does make it

³ Faye Taylor, *Evolve. Connect. Succeed. Funding a Healthy Research and Innovation Ecosystem*, University Alliance, 2015, Chapter 4.

⁴ Department for Business Innovation & Skills, *Grant Letter to HEFCE, 2015-16*, 2015 n. 18.

⁵ See for example the role of design with other disciplines in solving challenges: University Alliance and Design Council, *Design & Education: Creating the Future*, 2014.

difficult for it to fund the high costs of multi-partner, multi-disciplinary bids. As a result many of the researchers who would naturally apply to AHRC for funding actually approach other Research Councils.

13. The effective assessment of funding interdisciplinary research is an important challenge. For example, an 'Engineering / Medicine' project is unlikely to be scored highly by either a pure medic or a pure engineer. Interdisciplinary research needs to be assessed and specified by people who understand interdisciplinarity. This may involve further review of the balance of representation on peer review panels.
14. There are also issues with involving individuals with appropriate but non-traditional skills – a potential research team member with appropriate professional or industry skills may not have an academic contract and so cannot be a co-investigator on an interdisciplinary team. Recognising non-academic research partners would also remove some barriers to collaboration.

Collaboration with industry should not be stifled by uncompetitive public funding schemes

15. We must let industry choose who their research partners are. As patterns of private investment show, industry partners choose to work with a variety of universities that suit their needs. Restricting the public funding which can support these partnerships to only part of the university sector not only fails to make use of existing university-business relationships, but also asks companies to act in a non-competitive funding environment counter to market forces. Open innovation requires open competition.
16. One example is a new allocation method of public funding for Industrial CASE (iCASE) awards by the EPSRC. Only the 44 HE institutions in receipt of a Doctoral Training Grant (DTG) are eligible for this, an eligibility list based on previous funding awards. These awards are described as 'funding for PhD studentships where businesses take the lead in arranging projects with an academic partner of their choice'. They provide PhD students with a challenging research training experience, including a mandatory industrial placement, within the context of a mutually beneficial research collaboration between academic and non-academic partner organisations.⁶
17. The result of uncompetitive funding allocation in this case means that private funds for investment in PhD training have been left unleveraged, symptomatic of a misalignment of the objectives in research funding. Due to the limitations on the eligibility of academic institutions, businesses do not have a full choice of partners and businesses who were prepared to invest in an iCASE studentship did not, as they could not work with their partner of choice. Alliance universities have reported multiple instances of significant industrial partners including EDF Energy, BAE Systems, Hydro International and Green Frog Group, plus

⁶ www.epsrc.ac.uk/skills/students/coll/icase/Pages/intro.aspx [Accessed July 2014]

numerous SMEs, who were willing but unable to invest in an iCASE with their partner of choice.

Collaboration with other funding bodies and research institutions will catalyse innovative partnerships

18. Specific and openly competitive calls that partner RCUK with agencies like Innovate UK help to integrate multidisciplinary project teams with a range of expertise. Existing interventions that promote interdisciplinary research centres and problem-led challenges are a good model for this and could be further prioritised. Horizon 2020 has taken a similar approach with industry-focussed calls, which are led by industry and have encouraged increased SME participation. RCUK could also have a role to play to support the Catapult network in its endeavours to integrate more fully with the whole university research base.
19. Research organisations such as the Meteorological Office, the Health and Safety Laboratories and the National Physical Laboratory have different drivers and their viability (or otherwise) should not depend on Research Council funding. However, they should also be able to source funding from RCUK as long as they are contributing to academia through published outputs in the same way as universities. Partnerships between HEIs and these institutions should be supported and encouraged. This would catalyse new collaborations and bring together complementary strengths. The specialisms for developing standards at, for example, the National Physical Laboratory or Health & Safety Laboratories would be of huge benefit to university calls.

Recommendations: Collaborations and partnerships

- Collaborative research is essential and should be further encouraged through:
 - Thematic (interdisciplinary) network-based competitive funding programmes
 - Recognising the contributions of collaborators such as co-investigators
 - Registering information about ‘pass through’ funds to collaborating partners
- Representation on peer review panels should be broadened to embed expertise in research impact and interdisciplinary research further in assessment processes
- Barriers to the leverage of private funding should be removed by abolishing the practice of funding restricted lists of universities
- Joint funding calls with other funding bodies and organisations using standardised openly competitive assessment criteria should be encouraged

Balance of funding portfolio

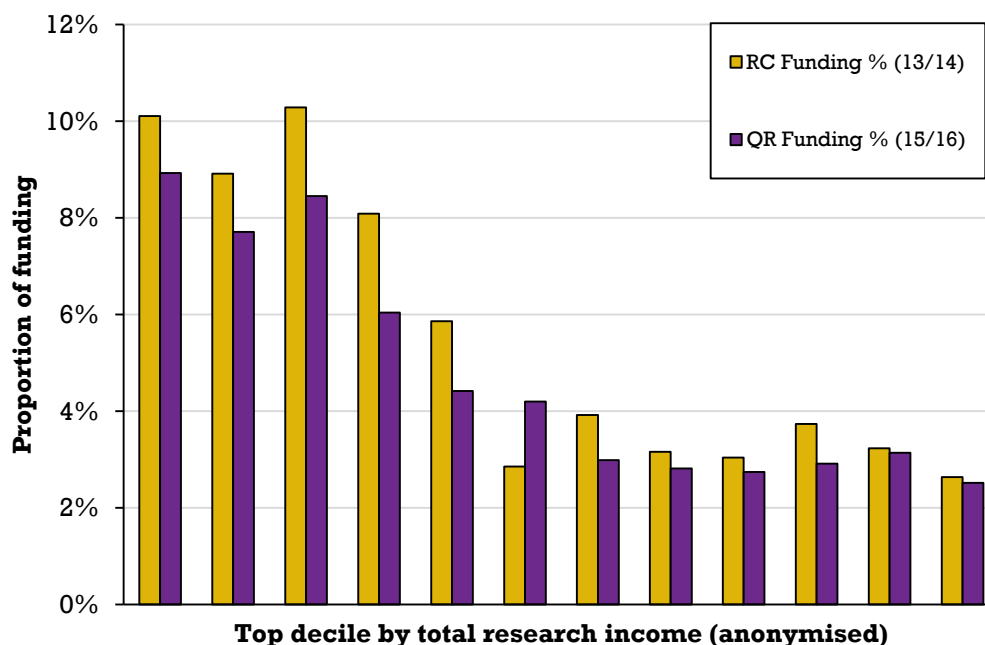
Research council funding is not balanced in line with quality distribution

20. Whilst there may be arguments for decreasing the number of Research Councils, we do not consider these compelling.
21. However, University Alliance is concerned that Research Council funding does not currently reach the full distribution of research excellence in the UK. The principle of funding excellence wherever it is found is a guiding principle of UK research funding as stated in the 2015/16 grant letter to HEFCE and the Science and Innovation Strategy (December 2014).⁷ Open competition must lie at the heart of determining excellence. Funding councils have received significant reductions to their budgets in recent years which have necessarily driven back-office efficiencies. One consequence of this has been that some efficiency measures at some Research Councils have led to cases of uncompetitive responsive-mode funding allocations. Yet strong evidence shows that over-concentration of funding on the basis of previous funding delivers diminishing returns.⁸
22. Quality-related funding is calculated on the basis of the REF results, widely accepted as the most thorough open competition for assessing research quality, and scale of research activities through FTEs. QR funding is therefore a useful benchmark for assessing where research excellence exists. Analysis of HEFCE's QR allocations compared to RCUK funding demonstrates a higher level of concentration in Research Council funding in England to the top decile of institutions by total research income: 65% for RCUK compared to 57% in QR. In all but one case more RCUK funds flow to the top decile than QR, as shown in Figure 1.
23. There are various uncompetitive mechanisms used by some Research Councils which contribute to this narrowing effect, often driven by back-office cuts. These fit under two broad categories: the use of rear-view funding allocations to calculate future funding allocations and prioritising engagement with priority institutions, including the communication of funding opportunities. As outlined above, open competition should inform all funding decisions.

⁷ Department for Business Innovation & Skills. HM Treasury and Department for Business Innovation & Skills, *Our Plan for Growth: Science and Innovation*, 2014.

⁸ Meredith Wadman, "Study Says Middle Sized Labs Do Best.," *Nature*, 468 (2010), 356–57. Jean-Michel Fortin and David J Currie, "Big Science vs. Little Science: How Scientific Impact Scales with Funding.," *PLoS one*, 8 (2013).

Figure 1 Research Council funding to the top decile is concentrated beyond REF-informed quality related funding



Rear-view funding allocations

24. The use of algorithm-based determinants of ‘excellence’ based on historical award income has resulted in the exclusion of some parts of the ecosystem, which might offer greater excellence, from applying. To give two examples, historic funding volume algorithms were used to distribute funding for the ESRC, STFC and EPSRC’s IAAs. Similar algorithms have also closed off competitive applications for doctoral training including EPSRC and STFC Doctoral Training Partnerships (DTPs) and EPSRC iCASE awards.
25. Although these allocation methods can lead to cost savings related to the processes of assessing applications, they could be a false economy if the research outcomes do not deliver value for money and do not achieve the maximum societal and research return. They also close down opportunities to leverage investment from other sources. The rear-view allocation model also works against innovation in practice, and stifles competition.

Working with a restricted list of ‘priority’ institutions

26. Often as a result of efficiency pressures, some Research Councils operate a priority system, developing strategic relationships with a restricted list of universities. Research Councils have undergone severe back office cuts and in many cases this has reduced the staff resource levels including for liaison officers. Using the network effect of consortia groups like University Alliance can help share the burden of liaison and allow Research Councils to reach more of the research base.

27. Closed competition can also occur de facto because some Research Councils choose to alert preferred institutions in advance of others to funding opportunities. This can mean that non-priority institutions have insufficient time to prepare an application. In one example reported to us such an institution found out about a call early through other routes, and so had sufficient time to prepare a bid. Their bid won funding, demonstrating that they could meet the quality threshold if given the same time as other institutions to prepare. Priority communication lists are not an effective demand management solution if they discount excellent applications.
28. National funding bodies should act equitably to the national research and innovation ecosystem. We urge more transparency and a standardised communication system to alert applicants to funding opportunities at the same time.

Support for postgraduate research (PGR)

29. Funding has also been concentrated into fewer universities as a result of other allocation reforms. The introduction of ‘fewer, larger, longer’ awards through DTPs and Centres for Doctoral Training (CDT) mechanisms have been compounded by alignment with priority areas and have been coupled with the removal of PhD researchers as a viable cost in the vast majority of research grants.⁹ The 20 institutions at the top of the funding distribution trained 75% of all research council-funded studentships in 2012-13 compared to 51% in 2010-11, and over a fifth of institutions who had previously trained research council students no longer had any.¹⁰ Likewise, recognised excellent research units now have no publicly-funded studentships: 36 institutions with 4* rated research currently receive no Research Council CDT funding. The implication is that some research students who could have worked with specialists in peaks of excellence are now not able to work in those environments as they lie outside the distribution of RCUK PGR funding.
30. Whilst research funding has been concentrated into fewer institutions, PGR uptake has increased elsewhere in the sector. NUS analysis submitted to our recent consultation shows that Alliance universities had the most growth in their share of UK PGR capacity, more than doubling (104%) the number of PGR graduates between 2002/3 to 2012/13, whilst their collective share of research grants and contracts declined during the same period (Figure 2). Traditional research intensive parts of the sector which have seen an overall increase in research income have seen a decrease in total share of PGR graduates.

⁹ Only the MRC and NERC have retained separate, if small, funds for supporting PhD researcher training as part of large grants, programmes or institutes. The ESRC will re-introduce this from 2017 for universities outside the DTP network.

¹⁰ Universities UK, “The Funding Environment for Universities 2014. Research and Postgraduate Research Training,” 2014.

Figure 2 Increases in PGR share have been inversely correlated with research funding over the last decade

Source: Analysis of HESA Finance Returns / HESA Student Qualifiers

	University Alliance	Highest-earning 20 universities for research income
% change in Doctoral graduates (2002-03 to 2012-13)	133.6%	41.5%
% change in share of UKHE Doctoral graduates (2002-03 to 2012-13)	2.8%	-2.8%
% change in total research income (in cash terms 2002-03 to 2012-13)	62.6%	91.7%
% change in share of UKHE research income (in cash terms 2002-03 to 2012-13)	-0.3%	4.9%

31. Whilst cross-subsidy has allowed this growth thus far, it is not a sustainable model, which brings problems related to accessibility and finance. As the Higher Education Commission has pointed out, over-concentration of research funding curtails opportunities to develop early career researchers.¹¹ As well as outlining the benefits of cohort learning for doctoral students, a recent report for the ESRC on their Doctoral Training Centres Network has highlighted ‘significant issues’ with the model, particularly with regard to the concentration of resources, exclusion of excellent research units, diversity and widening access, sustainability of funding, and industry engagement.¹² The ESRC has responded positively with its Postgraduate Training Strategy 2017-2022. To facilitate a more permeable DTP network, it will encourage collaborations with partners beyond the DTP network and allow universities outside the network to apply for CDTs, and to include studentships on Centre and Large Grants which will help build capacity.

32. New models of PhD training through cohorts are creating dynamic, rich training environments.¹³ As demonstrated by many existing Centres for Doctoral Training (CDT), the cohort mass for training environments does not have to exist solely within a single institution. In fact many CDTs are based on multi-institutional consortia and benefit from bringing together resources from a range of institutions, as recognised by the ESRC’s strategy. Likewise, the AHRC positively encouraged collaborative bids in its last round, and supports 75 institutions across 18 DTPs and CDTs. When delivered by multiple partners, doctoral training schemes enable students and researchers to forge new cross-institutional

¹¹ Higher Education Commission, *Too Good to Fail. The Financial Sustainability of Higher Education in England*, 2014.

¹² Richard Bartholomew and others, *Review of the ESRC Doctoral Training Centres Network*, 2015.

¹³ Bartholomew and others.

connections, and create an environment conducive to innovation. We urge all Research Councils to support multi-institutional and collaborative doctoral training schemes, to allow the best of the future to work with the best in the system: providing students with access to a diversity of supervisors with a range of skills and expertise and reaching excellence across the ecosystem.

Recommendations: Balance of funding portfolio

- Better communication and engagement is necessary between the Research Councils and the national ecosystem of research and innovation, but is resource-intensive. Research Councils should make use of the networks of consortia groups like University Alliance to help share the burden of liaison and enable Research Councils to reach more of the research base.
- A standardised communication process should be used to alert all potential applicants to funding opportunities at the same time
- Research Councils should support consortia of universities to deliver doctoral training.

Effective ways of working

33. Throughout this response we have made a number of suggestions for improved ways of working that we briefly summarise here:

Engagement with Research Council communities should be broadened

34. An unintended consequence of back-office efficiencies has been to reduce the number of institutions with which Research Councils communicate directly. Email technology and the convening power of organisations such as University Alliance should be used to ensure communications reach all universities at the same time.
35. Greater recognition should also be given to all involved within cross-institutional research teams. This practice is increasingly an important part of the research and innovation ecosystem and we should work to ensure that any disincentives to this mode of working are reduced.
36. Building relationships between people is the key to good collaborative research ensuring that research teams are able to draw on expertise from across the system. RCUK-supported network opportunities have been shown to promote the formation of new partnerships and should be further encouraged alongside a cross-institutional approach to doctoral training.

Peer review remains central

37. Peer review is a critical part of a system that is able to reward excellence wherever it exists. However, there may be some circumstances where it is appropriate to broaden the selection of those that take part. For example, as we recommend above, we should ensure that the assessment of interdisciplinary research, applied research and research impact is judged by those that fully understand these practices.