

Underpinning our world class research base: the importance of ‘QR’ funding

1. Summary

- The UK’s dual support system of investment in research (quality-related funding for universities plus Research Council and other funding) plays an essential part in sustaining research of the highest quality, ensuring the UK’s leading universities remain internationally competitive.
- Quality-related ‘QR’ funding is a highly competitive funding source which allows universities to engage in long-term strategic planning for research and to respond quickly to emerging opportunities, giving them a strategic edge against international competitors.
- **Without QR funding, the UK would not have: graphene, genomics, opto-electronics, cosmology research, and new tests and treatments for everything from bowel disease to diabetes, dementia and cancer.**
- Flexible, longer-term funding complements a challenge-based approach to research funding by ensuring there is a pipeline of new ideas to underpin innovation in areas which have not yet emerged as the global challenges of the future.
- QR funding is vital in helping develop new collaborations and partnerships, allowing universities to share risk via co-funding. The Charity Research Support Fund (CRSF) and business support elements of QR funding are especially valuable for this.
- As well as underpinning and leveraging other funding, including from industry and charities, QR is used to support a wide range of activities which keep UK universities at the forefront of global science, including:
 - Building interdisciplinary research capacity
 - Supporting cutting-edge, curiosity-driven or newly developing research areas
 - Attracting and retaining top researchers and supporting staff development
 - Developing and improving research infrastructure, facilities and equipment
 - Training and developing postgraduates and early career researchers
- As part of the new industrial strategy, and to meet its commitment to ‘balanced funding’ in the HE and Research Act, **we encourage Government to allocate a meaningful proportion of the additional £4.7 billion R&D funding to 2020-21 to the QR investment stream.** In particular this should be via the business support element and the Charity Research Support Fund, with appropriate allocations to the funding bodies in the devolved nations as well. This will be integral to achieving the Prime Minister’s goal for the UK to continue to be one of the best places in the world for science and research.

2. Supporting collaboration and leveraging other funds

- 2.1 Universities use QR funding to develop collaborations and partnerships with a range of other organisations. While businesses may find it challenging to invest in risky research, or projects with medium- to long-term returns, QR funding allows universities to share this risk via co-funding, helping to facilitate university-business collaborations.
- 2.2 Evidence shows universities that have higher research funding (including from QR) are able to generate more research income from other sources.¹ In other words, the more QR funding allocated to a university, the more evidence of external organisations being willing to pay for a range of research activities and commercialisation.² The Charity Research Support Fund (CRSF) and business support elements of QR funding are especially valuable in this respect.

Working with business

- 2.3 QR funding helps universities leverage in funding from business. For example, QR funding was used by the University of Warwick to **leverage in funding** from UK-based pharmaceutical company Funxional Therapeutics Ltd to co-fund PhD students involved in research collaboration between the two partners, as well as with University of Cambridge. The subsequent sale of the team's research to another pharmaceutical company generated a multi-million pound return to Funxional Therapeutics and its investors.
- 2.4 **QR can be used to support businesses to grow and innovate**, such as at Queen Mary University of London, where QR funding together with funding from the GLA was invested to set up and support the Queen Mary Bioenterprises Innovation centre, the largest purpose-built commercial laboratory space available for rent in London. The centre has had significant impact, assisting around 200 businesses and supporting 430 full time jobs.

Working with charities

- 2.5 The CRSF allows **universities to bid for, and underpin, substantial amounts of research funding from the UK's third sector organisations that might otherwise go overseas**. Indeed, over a third of publicly-funded research in the UK is funded by charities.³
- 2.6 Most charities will only fund the directly incurred costs of a research project, so the CRSF is essential to support the other indirect costs incurred by universities in undertaking this work. As the charities element of QR has been essentially flat cash since the spending review in 2010 it has not kept pace with the increasing levels of charity research investment.

Complementing other sources of public funding

- 2.7 **QR can be used to complement and secure investment from the public sector**. For example, the UK's Institute for Particle Physics Phenomenology (IPPP) was set up by Durham University with QR funding combined with Research Council support. The investment enabled Durham to secure further funding from a charity, the Ogden Trust. Work carried out at the IPPP includes much of the analysis behind the Large Hadron Collider in Geneva and nearly one-tenth of the world's published and top-cited papers in particle physics phenomenology originate from the IPPP.
- 2.8 **QR funding is often vital in securing Research Council funding** when institutional support is required to secure a grant. In general, as the Research Councils only fund 80% of the full economic cost of research, QR funding is often used to make up the additional 20% of the cost of research.

¹ *The Economic Significance of the UK Science Base* (March 2014) <https://goo.gl/295pTR>

² *A Review of QR Funding in English HEIs: Process and Impact* – a report to HEFCE by PACEC and Centre for Business Research, Cambridge (December 2014).

³ <http://www.amrc.org.uk/blog/research-funding-stats-charities-unique-contribution-to-uk-medical-research>

3. Strategic investment keeping UK universities ahead of the game

- 3.1 QR funding allows universities to invest strategically in new ideas, talent and facilities that underpin ground-breaking developments, such as the applied centre for superconductivity at the University of Oxford that opened this year and will study applications in energy, sensors and healthcare. The flexibility of the funding stream allows universities to forward plan, take risks and be pre-emptive in the funding of new R&D opportunities.
- 3.2 Many sources of public funding for research are more short-term in nature. By contrast, as HEFCE research has found, **QR funding is vital in allowing universities to develop and implement long-term research strategies**.⁴ QR also enables institutions to allocate resources to priority areas and types of research which may not typically be supported by the Research Councils. The Institute of Arab and Islamic Studies at the University of Exeter, for example, was supported by QR at a time when the number of academics working on these subjects in the UK was relatively small. This allowed the university to maintain a critical level of high-quality research and the Institute has been able to make a significant contribution to a range of key debates over the last decade, including the radicalisation of British citizens.
- 3.3 **Interdisciplinary collaboration is becoming increasingly important and QR funding can be used to support this**, stimulating and developing new areas of research. At UCL, QR funding supported the appointment of new staff responsible for growing and coordinating interdisciplinary research across the university, while the University of York has used QR funding to underpin cutting-edge interdisciplinary work between the Departments of Psychology and Chemistry at the York Neuroimaging Centre and the Centre for Magnetic Resonance, both among the pre-eminent facilities in the UK in their respective areas.
- 3.4 Our universities rely on cutting-edge equipment and facilities to carry out high-tech research and QR funding enables them to deliver key infrastructures to support this. The School of Geosciences at the University of Edinburgh, for example, invested QR funding in an aircraft to support researchers in their studies of the lower atmosphere and its interactions with the land surface. The aircraft enables researchers to make atmospheric measurements up to 10,000 feet above sea level and to produce images of the Earth's surface.
- 3.5 As well as underpinning pioneering research, **QR funding can help universities invest in training and skills development**. At Imperial College London, QR funding was invested to support two graduate schools running an extensive series of core training programmes in transferable skills, scientific methods and key laboratory techniques. The funding also supports courses such as business skills and commercial awareness, which provide PhD graduates with an introduction to the business world through a mini-MBA programme.

4. QR as a long-term investment in the UK's future

- 4.1 Maintaining the balance between QR funding, which can be used to fund long-term or risky research, and challenge-based funding which will be delivered through the new Industrial Strategy Challenge Fund, is crucial. In particular, it ensures there is a pipeline of new ideas to underpin innovation in areas which may be transformative in how we understand and address the global challenges of the future.
- 4.2 To maintain the competitiveness of the UK research base we encourage Government to allocate a meaningful proportion of the additional £4.7 billion R&D funding (announced in Autumn Statement 2016) to QR, particularly via the business support element and CRSF. Appropriate allocations must be prioritised for the funding bodies in the devolved nations as well. This will be integral in insuring the UK continues to be one of the best places in the world for science and research.

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⁴ *A Review of QR Funding in English HEIs: Process and Impact*