

Nurse Review of Research Councils

Response by the Wellcome Trust - April 2015

Key points

- The UK is renowned for its research excellence and much of this can be attributed to the Research Councils and the dual support system.
- The Councils effectively champion their separate disciplines. However, we do not think that they collaborate successfully to support interdisciplinary research that addresses major scientific or social challenges.
- One way to address this could be reconfiguring Research Councils UK (RCUK) so it becomes a true umbrella body, with sufficient authority and budget to enable it to fund and coordinate cross-cutting challenges, and provide oversight and management of national, international and multi-disciplinary facilities.
- There is a role for both response-mode and more targeted funding in the science portfolio. The Government has a key role in setting strategic priorities, but this should be done transparently and with input from expert advisers. Final funding decisions must be based on excellence.
- The Research Councils must better support and incentivise industry collaborations and entrepreneurship to promote translation and innovation.

Introduction

1. The Wellcome Trust is a global charitable foundation dedicated to improving health. In 2015, we will invest around £750 million in biomedical research and the medical humanities — a figure that we plan to increase over the next five years. Our breadth of support includes public engagement, education and the application of research, and the majority of our funding is currently spent in the UK as a direct result of both the excellence of the research base and the Government's commitment to science.
2. UK research is world-leading and the Research Councils play an important role in this ecosystem. The Trust works closely with various Councils on a number of joint funding calls and policy initiatives — a summary of our interactions is included at **Annex 1**. While we are pleased to input into this call for evidence, we are also concerned that the ongoing uncertainty over the Research Councils' future, suggested by continuing reviews, risks diverting attention from their core mission of supporting research.

Consultation questions

Effective ways of working

3. The Research Councils play an important role in funding research and supporting careers. The UK's reputation as a competitive location for excellent research, with world-leading universities and institutes, and high-quality infrastructure, is well recognised. Much of this strength can be attributed to our effective Research Councils which operate with a clearly defined purpose.
4. Continued Government support for Research Councils will ensure on-going confidence, partnership and leveraged funding from charities, industry and investors. Between 2006 and 2013, Medical Research Council (MRC) investment of £3.5 billion led to a further £1.5 billion commitment from charities¹. For every £1 spent by the Government on R&D, private sector R&D output rises by 20p per year in perpetuity².

¹Data gathered by a system called Researchfish which collects information about the outputs of MRC research that have arisen since 2006.

²Campaign for Science and Engineering (2014) *The Economic Significance of the UK Science Base* <http://sciencecampaign.org.uk/?p=14109>

5. The dual support system is a particularly critical element of the research base. Research Council grants support cutting-edge, investigator-led projects and programmes. At the same time, Funding Council quality-related (QR) block support gives institutions the flexibility to take long-term and strategic decisions, build capacity, pump-prime, and develop new opportunities to a point where they are able to bid for competitive funding, including from Research Councils. This also enables a diverse range of organisations to invest in university research.
6. The optimum number of Research Councils is often debated, and while there is no easy answer, what matters most is the existence of strong disciplinary champions and highly-effective oversight of research at the boundaries between fields. Our view is that the current divisions are broadly appropriate and the separate discipline-specific Councils ensure that different areas and communities are effectively represented. Research Councils have a good understanding of sector developments, work well with their different external stakeholders to set policy, strategy and priorities, and have strong leaders who represent their specific fields. The individual Councils' public engagement activities also reflect their different communities and priorities.
7. We are not convinced that cross-Council collaboration is working effectively. It is important that we get this right — today's grand challenges in health do not sit neatly in research silos, and will only be solved by working across disciplines and sectors. The cross-Council research themes have had varying degrees of success and have not always catalysed successful partnerships.
8. Issues around collaboration have been exacerbated by recent fiscal pressures which mean that Research Councils are competing for a flat-cash funding pot and must continually demonstrate their individual impact and make the case for investment. This leads to competition rather than cooperation. A long-term spending plan for science would give Councils more security, and enable them to better plan and work together.
9. However, this alone will not solve the problem and an effective, overarching cross-Council entity is needed to spearhead and incentivise partnerships. Enhancing the RCUK Strategy Unit's level of influence could be one way to drive this joined-up offering and provide a true umbrella function. It has already done much to provide a single voice in relation to policy coordination on data sharing and open access, career development and research integrity. It has also championed public engagement in the higher education sector, and convened funders to produce the Concordat for Engaging the Public with Research³. However, its effectiveness is limited in its current form, in part due to insufficient budget and buy-in.
10. The right configuration for a refreshed and strengthened overarching body needs to be carefully considered so that it has the teeth, the tools and the budget to catalyse collaboration. An effective entity could fund and coordinate cross-cutting research challenges. Building on recent changes following the review of the Large Facilities Steering Group, it could also provide strategic oversight and management of national, international, multi-disciplinary and cross-Council facilities such as the Diamond Light Source⁴, the Pirbright Institute and international subscriptions. It could enhance support for the UK's skilled researchers and technical staff. It would also mean that new bodies are not established to address issues that fall across Council remits.
11. Research Councils often work effectively with other funders and learned societies on policy issues, and provide valuable expertise in such discussions. We suggest they could usefully build on this role within a European context, including through their engagement with Science Europe. European legislation has a direct impact on UK researchers but the remit of the Research Councils in this area has not always been clear. The Government should also better consult with Councils on relevant EU policy issues and make the most of their in-house resources.

³RCUK (2010) *Concordat for Engaging the Public with Research* <http://www.rcuk.ac.uk/pe/Concordat/>

⁴The Trust is taking part in the ongoing Diamond Governance Review, and the Nurse Review should take its recommendations into account.

Balance of funding and strategic decision-making

12. There is a role for both response-mode and more targeted, strategic funding in the UK science portfolio, and research should be focused on advancing knowledge as well as priorities for health and societal benefit.
13. Research Councils should work with their respective communities to identify new opportunities. However, researchers need the flexibility to ask the right questions and put forward the best ideas, and scientific peer review should be used to identify which projects to fund. At the same time, the Government has an important role in identifying strategic areas of importance and setting broad priorities for funding, and this should also be informed by expert advice. Whether response-mode or strategic, decisions must be based on excellence.
14. We are concerned that some recent Government decisions have lacked openness and transparency. For example, the 2014 Autumn Statement detailed plans to establish a £235 million advanced materials institute in Manchester — dubbed the ‘Crick of the North’. It is not clear to us how this decision was reached or the rationale behind it. It also came without a long-term plan for funding. This is in stark contrast to the way in which the Francis Crick Institute was established, building on two existing operational budgets. The creation of new facilities has lasting implications and there is a danger that resources will be spread ever more thinly unless this is carefully thought through.
15. Many Government departments hold research budgets, giving them the autonomy to directly commission work related to their policy priorities in the most appropriate manner. This could involve the Research Councils where there is a good fit, particularly if funding is directed at an area of strategic importance that would benefit from robust peer review. For example, the Department for International Development, the MRC and the Wellcome Trust have successfully partnered to support clinical trials for global health. Ultimately, the Government must ensure that it is open about how decisions on research priorities are arrived at in whatever form they take.

Collaborations and partnerships

16. There is a continuing push to remove barriers to research translation through policy, practice and behaviour change. As a fundamental first step, we must encourage a ‘revolving door’ between academia and industry, and ensure that there is an awareness and understanding of the commercialisation process across the science base. The Research Councils and other funders, including the Wellcome Trust, have an important role to play. Our researchers should be able to access training and mentorship to equip them with the skills they need to collaborate with commercial partners.
17. While publication outputs are an important metric for scientific success, it is important that funders recognise the range of behaviours that contribute to a flourishing research environment. This includes collaborative, cross-disciplinary and cross-sector working, advisory roles, and mentoring activities. Entrepreneurship should be celebrated, rewarded and supported, and funding and incentives should encourage industry placements and secondments.
18. There are increasing signs that the Research Councils and Innovate UK are working together more effectively to ensure continuity between basic research and the development of treatments, technologies and products. It is encouraging that the joint Catalyst programme has now expanded from the original Biomedical Catalyst, to new funding streams focused on Agri-Tech, Energy and Industrial Biotech. The Cell Therapy Catapult has also recently announced that it will build its new manufacturing centre on the Stevenage Bioscience Catalyst site — this bioscience park is supported by the Trust and works to accelerate product development through open innovation.

19. Research uptake across the NHS must be improved so innovative medicines and technologies reach patients as quickly as possible, and the Wellcome Trust is pleased to support the Office for Life Sciences' Accelerated Access Review which aims to address this. Collaboration between the MRC and the National Institute for Health Research is working effectively under the auspices of the Office of Strategic Coordination of Health Research. However, we believe that the MRC is best administered via the Department for Business, Innovation and Skills, alongside the other Research Councils and Innovate UK. This is the best way to underpin a truly interdisciplinary research environment across the UK.

The Wellcome Trust is a global charitable foundation dedicated to improving health. We support bright minds in science, the humanities and the social sciences, as well as education, public engagement and the application of research to medicine. Our investment portfolio gives us the independence to support such transformative work as the sequencing and understanding of the human genome, research that established front-line drugs for malaria, and Wellcome Collection, our free venue for the incurably curious that explores medicine, life and art.

Annex 1: Summary of partnerships between the Trust and Research Councils

MRC	<ul style="list-style-type: none"> • The Francis Crick Institute: a £650 million partnership between the MRC, the Wellcome Trust, Cancer Research UK, University College London, King's College London and Imperial College London, to develop a world-leading centre for biomedical research. • UK Biobank: an initial commitment of £62 million, with further enhancement awards agreed, to support a unique cohort resource of 500,000 people aged 40-69. • ALSPAC: In April 2014, the Trust and the MRC invested almost £8 million to further support this long-running cohort study. • The Wellcome Trust-MRC Cambridge Stem Cell Institute: an £8 million investment in a world-leading centre for stem cell biology and medicine. • The Human Induced Pluripotent Stem Cell Initiative: a £12.75 million initiative to create a catalogue of high-quality adult stem cells, known as 'induced pluripotent stem cells' (iPS cells). • Clinical Infrastructure Call: a strategic alliance to support the MRC's Clinical Infrastructure Call and maximise the impact of capital funding for clinical research. • Global health trials scheme: a £36 million initiative, with funding from the Department for International Development, the MRC and the Trust, to fund late-stage trials of interventions that will help improve health in low- and middle-income countries by addressing the major causes of mortality and morbidity.
MRC, BBSRC	<ul style="list-style-type: none"> • Europe PubMed Central: a free-to-access repository of publications for biomedical and health researchers, supported by 26 funders in the UK and Europe. • European X-ray Free Electron Laser (XFEL): a £5.6m strategic funding commitment to enable UK structural biologists to join an international consortium for the construction and operation of a beamline for macromolecular crystallography at the European X-ray Free Electron Laser (X-FEL) in Hamburg. • Cryo-Electron Microscopy Facility: an £11m strategic commitment to build a national facility for cryo-electron microscopy, located at the Diamond Light Source, providing UK researchers with access to state-of-the-art equipment that enables the high resolution study of biological assemblies.
MRC, ESRC	<ul style="list-style-type: none"> • UK Clinical Research Collaboration Public Health Research Centres of Excellence: a commitment of over £20 million by a consortium of eight funding partners to create five centres to strengthen public health research in the UK. • Expert Advisory Group on Data Access: a committee that provides strategic advice on the emerging scientific, legal and ethical issues associated with data access for human genetics research and cohort studies.

	<ul style="list-style-type: none"> • Health Systems Research Initiative: £15m funding initiative to support research that will generate practical measures to improve health systems in low- and middle-income countries.
MRC, ESRC, EPSRC	<ul style="list-style-type: none"> • Farr Institute of Health Informatics Research: In 2012, ten UK funders including the Trust, the MRC, the ESRC and the EPSRC, invested £19 million to support and strengthen research using patient records. In 2013, the MRC invested a further £20 million of capital to create the overarching Farr Institute.
EPSRC	<ul style="list-style-type: none"> • Innovative Engineering for Health: A £30 million partnership, announced in 2013, to fund biomedical engineering research and development to address major challenges in health. • Medical Engineering Initiative: a £41 million partnership launched in 2009 to stimulate the formation and support of four world-class centres of excellence in medical engineering in the UK.
STFC	<ul style="list-style-type: none"> • Diamond Light Source: a partnership between the UK Government, through the STFC, and the Wellcome Trust to operate a world-class synchrotron light source that serves researchers across all scientific disciplines and sectors.
AHRC	<ul style="list-style-type: none"> • Mind Space: in March 2015, the Wellcome Trust and the AHRC held a joint meeting intended to 'seed' more substantial partnership activities. This was the first of what we hope will become a series of strategic collaborations exploring practical solutions to the challenges of interdisciplinary research.
RCUK Strategy Unit	<ul style="list-style-type: none"> • National Coordinating Centre for Public Engagement (NCCPE): established in 2008 as part of the Beacons for Public Engagement initiative with the goal of supporting universities to increase the quality and impact of their public engagement activity. The NCCPE is funded by the UK Higher Education Funding Councils, RCUK and the Trust. • National Public Engagement Forum for STEM: a committee of organisations involved in funding informal learning in science, technology, engineering and mathematics (STEM), with a shared interest in improving cooperation and learning across the sector. RCUK is a member along with the Trust, the Department for Business, Innovation and Skills and others. • Factors affecting public engagement survey: 15 research funders including RCUK and the Wellcome Trust are working in a consortium to review researchers' understanding of, participation in and attitudes to public engagement, primarily by updating the 2006 Royal Society <i>Survey of factors affecting science communication</i>.