

Nurse Review of Research Councils: Call for Evidence

Response Form

Please state whether you are responding as an individual, or on behalf of an organisation:

This is the official response from the Royal Astronomical Society, informed by feedback from our Fellows employed in the UK astronomy, space science and geophysics research communities.

Please write here your name/ the name of your organisation and contact details. This would help us to contact you if we have further questions.

Dr Robert Massey
Deputy Executive Secretary
Royal Astronomical Society
Burlington House
Piccadilly
London W1J 0BQ
Tel: +44 (0)20 773 3307 / 4582 x214
Email: rm@ras.org.uk

Please provide evidence and views in relation to the following themes:

1. Strategic decision-making

Successive governments have described science and innovation as a key part of the strategy for UK economic growth, in a portfolio of both curiosity-driven ('blue skies') and applied research. The strategy has been ambitious and included membership of major international organisations like the European Southern Observatory and the European Space Agency, with enhanced capital spending on international projects such as the Square Kilometre Array and the PLATO mission. In geophysics, the government recently agreed to fund a new polar research ship¹.

These commitments have seen ministerial announcements of capital funding from BIS, with the assumption that the research councils (for RAS members this usually means STFC for astronomy and NERC for geophysics) support their operational running costs from their existing resources.

Though we welcome UK involvement in these projects, the Society is concerned about the governance of this approach, The decision making process is not necessarily subject to the same level of peer review that informs the allocation of grants from the research

councils, bodies which simultaneously saw cuts of up to 49% in their capital budgets as a result of the 2010 Spending Review².

The research councils have then been expected to find the funds to take full advantage of BIS-led capital investment, leading to severe pressures on the rest of their existing research programmes. This ‘batteries not included’ approach was highlighted in the 2013 House of Lords Science and Technology Committee report on Scientific Infrastructure³. Peers noted that existing and new facilities were and would not run at full capacity without adequate resource funding, thus not taking full advantage of the public investment in their construction. This can even result in the UK ceding its leadership role in research derived from capital investment.

Whatever the outcome of the review, we therefore reiterate our support for a strategic decision process that takes this into account – capital spending announcements should be made on the basis of peer review and should include adequate resources for operation and exploitation.

Another issue for general consideration is the timescale for supporting research projects. In some cases these take a decade or more to plan, construct and bring to operation, far longer than the typical cycle of grant funding and the intervals between government Spending Reviews. The uncertainty caused by these makes it hard for institutions to support projects in the way they would like, for example preventing universities from hiring postdoctoral researchers on sufficiently long contracts.

2. Collaborations and partnerships

STFC funds the overwhelming majority of UK research in astronomy and space science. Scientists working in these areas depend heavily on international collaboration and partnerships, like the aforementioned ESO and ESA. In the UK, collaboration *between* research councils is not always as effective as it might be. In the case of STFC, the management of facilities like ISIS on behalf of other research councils has come under scrutiny, with significant periods when these are not in operation.

Members of our community see obtaining support for interdisciplinary projects as a challenge in the current RCUK structure. A good example of this is space weather, which the government has added to the UK National Risk Register for Civil Emergencies⁴, but which spans several research councils and the UK Space Agency. Research into this area is required to facilitate the development of the nascent space weather forecasting services that can mitigate its effects. It comprises the physics of the space weather environment (covered by the STFC remit), the impact of this on the Earth’s atmosphere and magnetic field (covered by the NERC remit) and the operational forecasting expertise (in e.g. the UK Met Office). There is however no joined-up space weather strategy to enable this cross-council research.

In space science, the post-launch support for space missions was moved from STFC into the UK Space Agency, and some members of our community do not believe this is effective. The UK Space Agency decides the continued funding of existing space projects via its Post-Launch Support panels, and has its own budget pressures and

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32478/10-1356-allocation-of-science-and-research-funding-2011-2015.pdf

³ <http://www.parliament.uk/business/committees/committees-a-z/lords-select/science-and-technology-committee/news/scientific-infra-report-published/>

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/419549/20150331_2015-NRR-WA_Final.pdf

priorities, whereas the science from the space projects is enabled by STFC research grants. These two processes do not interact as well as they might; the funding for science is somewhat disconnected from the funding for operating the instruments to do that science.

3. Balance of funding portfolio

Within the constraints of and variation in government budgets, STFC supports long-term research in large scale national and international collaborations, and considers the balance of funding across the entirety of its programme. This leaves only limited resources for responsive grants and activities like public engagement.

The Society notes that STFC curiosity-driven research delivers societal and economic benefits in the short and long term, from unexpected discoveries to training of the scientific workforce. With a few exceptions, this science is however far less likely, than for example medicine, to receive support from charities and private benefactors. The structure of the research councils needs to reflect this, and take account of the way different disciplines are financed.

After a period of instability following its creation, STFC benefited from two measures introduced following a review by the then science minister Lord Drayson⁵. The first of these recognised that astronomy and particle physics depend on access to international facilities paid for out of the STFC budget through UK subscriptions. Sharp movements in the value of sterling can lead to a reduction in grant funding elsewhere, now mitigated against by Treasury protection. The second measure is a partition on funding for facilities operated by STFC for users supported by grants from all the RCUK councils. This shields STFC grant funding from fluctuations in those costs, but is not working well in ensuring that large cross-council facilities such as ISIS are being optimally operated and exploited.

The division of subjects between RCs is generally perceived to work well, although there are some concerns about the differing success rates between them. In practice these are hard to compare due for example to the application or not of demand management. Nonetheless, maintaining a strong research base in at least NERC and STFC will require an increase in responsive mode funding, as this has been eroded by the flat cash settlement and the need to support new capital projects.

Looking specifically at NERC, some members of the geophysics community comment that the balance of funding there has recently shifted further away from investigator-led and towards strategic programmes. Although that research council has put in place mechanisms for the community to influence strategy like the Strategic Planning Advisory Group (SPAG) and points are raised in settings like the two RAS-convened Geophysics Forums, the scarcity of funding means that these strategic programmes consist of a few very narrow programmes that are expected to span a very wide research remit. In this funding situation, investigator-led programmes are probably more efficient than strategic programmes at ensuring research excellence. There is also a concern that SPAG does not fully reflect the breadth of NERC science and that solid-Earth geophysics in particular is poorly represented.

In that discipline, recent capital funding has led to many individual universities investing in small-sized equipment facilities, which are in several cases duplicated and (especially given the scarcity of NERC research project funding) are likely to be under-utilised. Instead, capital funding in this area should be focused towards facilities that are

⁵ <https://www.stfc.ac.uk/2026.aspx>

available to the whole community e.g. existing NERC Services & Facilities and which are therefore likely to be used more efficiently.

4. Effective ways of working

The RAS convenes the Astronomy Forum, Solid-Earth Geophysics Forum and External Geophysics Forum to facilitate open and honest discussions between STFC (and the UK Space Agency) and NERC with their research communities. These meetings give senior members of staff in universities and research facilities, and their counterparts in research councils the opportunity to consider broader areas of strategy and policy. Given the good attendance at these events, our view is that participants regard them as a useful vehicle for engagement.

5. Any other comments?

The most recent reform of the research councils saw the creation of STFC, an organisation which took some time to build confidence with research scientists, after a very rocky start. With much more effective senior management in place and good relations with the astronomy and space science community, we would not wish to see further reorganisation for the time being, something that would be both risky and have a high opportunity cost.

The closing date for responses to this call for evidence is **Friday 17 April 2015 at 23:45**.

Please provide your response in Microsoft Word format. In order to be considered, submissions should be no longer than 3000 words.

Please email or post the completed response form to:

Email: nursereview@bis.gsi.gov.uk

Postal Address:

Nurse Review Secretariat

Research Councils Unit

5/ Victoria 1

Department for Business, Innovations and Skills

1 Victoria Street

London SW1H 0ET

Information provided in response to this call for evidence, including personal information, may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes.

© Crown copyright 2015

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/
This publication is also available on our website at www.gov.uk/bis

BIS/15/126RF