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Research funding: the problem with priorities

PHYSICS RESEARCHERS ARE CONCERNED THAT THE SUCCESS RATE FOR FUNDING CURIOSITY-DRIVEN GRANTS IS MUCH LOWER THAN THAT FOR MANAGED GRANTS.

Who is best placed to decide which blue-sky research projects to fund — government, or academia? This issue is at the heart of a debate between UK physical scientists and the Engineering and Physical Sciences Research Council (EPSRC), a government body responsible for allocating funding to the physics, materials science, chemistry, engineering and mathematics communities. In an open letter to the UK government's Science and Technology Committee[1], the physics community[2] (represented by the Institute of Physics; IOP) have expressed their concerns about the low success rate and lack of transparency associated with the prioritizing and funding of curiosity-driven research by the EPSRC. In particular, the selection criteria for basic science grants are very hazy to most researchers, who only know that their applications are being rejected, even after receiving very positive comments from referees.

Certainly UK physical sciences research is not in a happy state. Staff numbers in physics and engineering continue to decline. The amount of funding for physical sciences and engineering as a proportion of the total funding for all research areas also continues to drop. In the past year, physical-science researchers have seen the success rate of grant proposals funded by the EPSRC fall to new lows. The IOP estimates that the success rate has fallen to just 10–15% for so-called responsive grants used for funding curiosity-driven basic research, compared to around 30% for the managed programmes. Researchers are asking the question: is the recent decline in the success rate of curiosity-driven grant proposals just unfortunate, or part of a deliberate strategy?

What is clear is that when it comes to funding science, governments are not interested in providing a pool of money simply for the purposes of satisfying researchers' curiosity. Rather, they like to think in broad strategic terms — which research areas are most likely to lead to future advances in technology and wider societal benefits. This issue is by no means confined to the UK: there is a general trend in Europe and the US for basic research to be directed towards the same areas: nanotechnology, materials for energy and photonics to name a few. Many of these areas are undoubtedly going to be important for the future development of science and technology in the UK. But what many researchers are concerned about is that funding for these managed programs is eating into the funding available for bottom-up blue-sky research. The UK excels in a few key fields — organic semiconductors, photonics and carbon electronics, for example — and these fields are held up by the EPSRC as examples of past success. But by and large, these were unanticipated successes, rather than arising out of a deliberate effort. Meanwhile, the UK is falling further behind in other research areas[3]. This situation will surely not be helped by further concentration of funding in a few 'strategic' programmes.

In the end, this is not an argument about increasing the funding of basic physical sciences research. It is a question of whether funding priorities should be so heavily skewed towards a few so-called strategic areas. Should researchers be forced (even indirectly) to change the aim of their research so that it better complies with so-called strategic priorities? Interdisciplinary initiatives such as the Life Sciences Interface Programme — a joint EPSRC/Medical Research Council initiative — are drawing a larger proportion of government funding. However, because of their interdisciplinary nature, many of these proposals are scientifically weak in one of the component fields, and do not make it through the refereeing process. As the interdisciplinarity of basic science research increases, this problem will undoubtedly increase. The criteria for funding grants within and between the difference research councils urgently needs to be standardized. The EPSRC should not ignore the concerns of the physical sciences and engineering community, but should work with it to increase transparency and broaden the base of research topics on which they receive advice before funds are doled out the next time around.

References
1. UK Science and Technology Committee reports: http://www.parliament.the-stationery-office.co.uk/pa/cm/cmsctech.htm
2. IOP response to the Science and Technology Committee's scrutiny of the EPSRC: http://policy.iop.org/Policy/EPSRC%20scrutiny-final.doc
3. International Panel Review of UK Physics and Astronomy Research: http://policy.iop.org/Policy/Intrev.html