UK COMPUTING RESEARCH COMMITTEE

International Policies and Activities of the Research Councils

UKCRC Evidence to the House of Commons Science and Technology Committee

Executive Summary

1. Our evidence covers UK research in computing, which is internationally strong and vigorous, and a major national asset. Researchers in computing already work with colleagues overseas and we foresee continuing growth in the scale and spread of our international collaboration.
2. RCUK provides excellent support for overseas collaboration. We encourage EPSRC to continue seeking ways to reduce the overheads and potential "double jeopardy" when bidding for such funding.
3. UKCRC has established a programme of "Grand Challenges" in computing, as a focus for international collaborative research. It may be useful to explore whether this approach should be more widely adopted.
4. UK researchers derive great value from the EU Framework Programmes of collaborative research. We do not believe that any further support from RCUK to stimulate UK participation is needed, or desirable.
5. We support the establishment of the European Research Council (ERC). We recommend that RCUK should establish good relationships with the ERC, not excluding the possibility of some strategic funding in the early years.
6. There is little visibility among computing researchers of the role of Defra, DfID and the FCO in overseas collaborative research, though we are much aware of the support available from the Royal Society and other learned societies, and the Wellcome and Leverhulme Trusts.
7. There appears to be no need to stimulate international mobility of researchers.

Introduction

8. The UK Computing Research Committee (UKCRC), an Expert Panel of the British Computer Society, the Institution of Engineering and Technology and the Council of Professors and Heads of Computing, was formed in November 2000 as a policy committee for computing research in the UK. Its members are leading computing researchers from UK academia and industry. Our evidence reflects the experience of researchers who each have an established international reputation in computing.
9. The UK has always been exceptionally strong in computing research: the first modern computer was developed at Manchester University and ran its first program in June 1948; since that time, the UK has played a part in almost all the scientific and engineering advances in computing. Computer systems have transformed modern life, but computing is still a young discipline and the world is still in the early stages of discovering, inventing and exploiting its full potential. UK computing research remains world-class[1], and is a national asset that enhances the UK's international prestige, attracts inwards investment, and supports innovation for wealth creation and improved quality of life.
10. World-class researchers need to collaborate with other world-class researchers, and this is particularly important in a research field such as computing which is developing rapidly and where there is considerable international activity. The main countries for collaboration are still the USA, Canada and Australia, because of the strength of their science and the benefits of a common language, but there is significant and growing collaboration with other countries, in Europe and in Asia.
11. Three years ago, UKCRC introduced a programme to identify the Grand Challenges in computing: major open questions whose solution would be a major scientific advance and where there are grounds for believing that a major, international effort over a decade or more could make a breakthrough. Grand Challenge programmes already underway can be found on the Internet at http://www.ukcrc.org.uk/grand_challenges/current/index.cfm.
12. UKCRC members have very strong experience of working with EPSRC and with European programmes. Our evidence should be assumed to refer to EPSRC except where explicit reference

[1] This has been confirmed by successive EPSRC International Reviews, the latest of which reported earlier this year.

is made to other funding agencies.

The strengths and weaknesses of existing Research Council and OSI mechanisms and activities to maintain and promote international collaboration.

13. It is important to distinguish between collaborative research projects, and the important but less resource-intensive collaboration through short-term visits to (or by) international colleagues.
14. One of the biggest problems relating to international collaborative research projects is the double jeopardy with respect to funding. In the past, UK computing researchers submitted their proposal to EPSRC and the overseas collaborators submitted to their funding organisations. Each organisation had their own procedures and priorities for funding, so the chances of both proposals successfully being funded were quite low. This tended to deter researchers from applying for this type of funding.
15. Section 5.1.6, "Collaboration with the World" of the recent EPSRC International Review of Information and Communication Technology (ICT), available at http://www.epsrc.ac.uk/CMSWeb/Downloads/Other/ICTIntReviewReportV2.pdf, is strong on the need for US research linkages, and notes that experience with Framework Programmes has been "mixed". EPSRC has recently stated they will try to set up arrangements with the National Science Foundation (NSF) in the USA and with similar international organisations, so that a collaborative proposal only requires approval by one of the funding organisations and then both accept that result. This type of agreement is essential for substantial research collaboration but such agreements are not easy to set up; they are needed with other countries such as Canada, Japan, Korea etc. We strongly support EPSRC's efforts to facilitate such collaborative research.
16. EPSRC does provide support for travel grants and visiting Fellowships which can be used to initiate collaboration, but such grants are not sufficient to support any larger-scale collaborative projects.
17. Although the UK Research Councils have effective methods for providing funds for travel grants, workshops and visiting researchers, they have to be applied for in a form identical to that for other, usually much larger, responsive mode grants. This creates delays and overheads that are disproportionate to the value of the grant, and we would prefer some other method with a quicker turn-around time and lighter peer reviewing.
18. We recommend that negotiations for international collaborative research in Computer Science should be focussed on an agreed list of Grand Challenge topics like those described above. We draw special attention to the proposed initiative in Verified Software (an offshoot of GC6), which has already been the subject of intensive international scientific discussion. It is likely to feature among the early candidates for support by any new scheme.

International collaboration through the EU Framework Programme, including resources enhancing partnership between the Research Councils and European agencies in the new Framework 7 initiative and the provision of resources to stimulate UK participation in international programmes.

19. The Framework Programmes are very valuable to UK researchers and this is shown by the level of involvement of UK researchers in successive FPs.
20. UK scientists benefit greatly from the current range and choice of sources of support. We get more than our juste retour from the EU programmes, so it would seem that there is no need for the UK Research Councils to do more to stimulate UK participation. Research funding is a marketplace and, by bidding for EU Framework projects, researchers are demonstrating that the percentage of full economic costs (FEC) provided by the EU (70% of direct costs plus 60% overheads) is sufficient to justify their involvement. The UK has already provided its due share of research funding to the EU Framework, and we see no need nor benefit in additional top-up funds as this would inevitably mean that less research was funded overall.
21. The new European Research Council (ERC) has been created to support the best European researchers with less red tape and greater flexibility than Framework Programmes offer. Several UKCRC members have worked over many months to ensure that fundamental and basic research could be funded without the complexities of the standard Framework funding rules. The rules do not require cross-border co-operation, in fact single groups can be funded in one institute/university. Nor is industrial collaboration required, although it can be included if it will benefit the research. We recommend that RCUK should establish good relationships with the ERC, not excluding the possibility of some strategic funding in the early years.
22. EPSRC funds groups of researchers to visit a number of overseas institutions with the possibility of setting up collaborations - for instance, there were recent visits to India and Japan. However following this up with real collaborative projects has been difficult for reasons outlined above.
23. EPSRC has travel grants that can be used to help initiate EU grants and other international

collaborations. EPSRC are very flexible in their attitude to using travel funds that are included in existing grants to support meetings to set up new international projects in areas relating to the current grant. In our view there is no need for any additional support.

The effectiveness of collaboration between the Research Councils and the Government Departments involved in international scientific activities, including the OSI, Defra, the Foreign and Commonwealth Office's Science and Innovation Network and the Department for International Development.

24. There is little visibility among computing researchers of the role of Defra, DfID and the FCO in overseas collaborative research, though we are much aware of the support available from the Royal Society and other learned societies, and the Wellcome and Leverhulme Trusts.

The impact of the Research Councils' policies on the international mobility of scientists and engineers.

25. There appears to be no need to stimulate international mobility of researchers—the UK's researchers are traditionally some of the most mobile in the world, and foreign researchers always constitute a large part of the application list for any RCUK funded post; it is usual that most of the research assistants in the leading departments are foreign nationals.
26. The travel grants and visiting fellowships available from EPSRC and elsewhere provide adequate means of supporting the international mobility of scientists and engineers.

Further Evidence

UKCRC would be pleased to provide further detail of any of the issues raised above, either in writing or by way of oral evidence.

Evidence submitted by Martyn Thomas on behalf of UKCRC, April 2007.