# UK COMPUTING RESEARCH COMMITTEE

# Response by UKCRC to RCUK Consultation on Efficiency and Effectiveness of Peer Review

This evidence is submitted by 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. The UK ranks first or second in the world in many areas of computing research. UKCRC 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.

## 1. Consolidation?

The trade-off has to be made between consolidation and maximum flexibility. UKCRC considers that the balance between the flexibility to submit large consolidated grant applications and smaller responsive mode applications is about right.

There is already considerable consolidation of funding – DTA awards are based on existing grant funding and are now consolidated at the institutional level, whereas in the past they were allocated directly to departments.

Portfolio and Platform awards are a form of consolidation which is enthusiastically supported for their flexibility by those in receipt of these awards. An increase in this type of funding, which is peer reviewed, rather than being a formulaic allocation, is a form of consolidation which UKCRC would support.

There is another form of consolidation which took place with respect to the IT-centric IRCs funded in 2000 (and some subsequent special programmes in EPSRC). Unlike the round in 2000, EPSRC now appoints a technical director who chooses a group to apply for potentially substantial funding. This is very dependent on the qualities of the technical director and we are rather skeptical about this process compared to the open call for IRC consortia which took place in the 1999/2000 round.

Managed programmes with calls for large collaborative proposals for specific topics is also a form of consolidation which seems to work well and can be combined with outline proposals.

UKCRC would be opposed to a substantial shift of responsive mode funding to consolidated funding. This would be detrimental to young researchers, or researchers moving to a university from industry, who do not have a track record; it would make it very difficult for a potentially brilliant researcher in a university which does not get consolidated funding from getting any funding; it is likely to move peer review from being managed by research councils to local university management and so people from completely different disciplines will be reviewing local proposals. This is unlikely to cut down the overall cost of peer review, but just hide it within the universities.

## 2. Institutional level quotas?

The discussion about quotas etc. would be a possible solution to a high level of poor applications which would clog the reviewing (and EPSRC administrative) system. UKCRC sees far less evidence that this is a general problem than the strong evidence that there is randomness in the quality of reviews (a point to which we return in the final section below).

A rigid quota system will not provide the flexibility to cater for fluctuations which take place in the number of submissions within departments possibly due to hiring and personnel movement patterns, and multiple grants completing at about the same time.

We advocate strong encouragement for a form of voluntary filtering at departmental rather than institutional level. This is more a form of mentoring than filtering so that experienced researchers help new researchers to write proposals and make sure that inappropriate proposals are not submitted. Institutions could also be requested by RCs to do something about their departments that consistently

get low scores in their submissions. If the institution fails to respond adequately, then perhaps a quota could be imposed, based on the number of proposals they submit, to bring them in line with an appropriately weighted average but it seems rather unlikely that any department would choose to ignore an explicit warning. Even then, a name and shame sanction might be more effective than explicit quotas

## 3. Controlling resubmissions/recycled proposals?

We consider that part of the problem of resubmitted proposals results from the reviewing process and the fact that very little information is fed back to proposers as to why a proposal was not funded.

Quite often proposals receive divergent reviews, with no clear consensus. Panels are not meant to re-review and may not have the expertise to judge the relevance of the reviews, so just average them in order to rank the proposal.

After the final ranking, one of the spokespersons for unfunded proposals should produce a summary of the conclusions of the panel with suggestions on whether resubmission should be allowed and what is needed if resubmission is permitted. Currently feedback is via APMs with no technical knowledge and is usually so bland as to be useless.

Currently the panels request very few resubmissions and leave it up to the investigator. We would like to see more explicitness. For example, feedback could indicate: resubmit to next panel with minor or no changes; include substantial modifications and resubmit after 6 months; or do not resubmit.

There are some analogies with the typical journal reviewing process where referee reports are used to improve papers which are finally accepted. A resubmitted proposal should include an addendum summarizing what changes have been made in response to referee reports. A resubmitted proposal should normally be reviewed by the same referees, who should also receive the addendum on changes made and the other referee reports. Currently resubmitted proposals are often sent to completely different referees and treated the same as new proposals.

Policing resubmissions that were not requested is a separate issue. This is difficult without carry-over of members between panels. Even the EPSRC staff change at such a rate that they would not have the memory or the technical know-how to detect resubmissions. This clearly points towards a good document management system, with fully automated analysis of interrelationships between proposals. The data mining technology for this has existed for a long time.

## 4. Greater use of outlines?

This idea is a double-edged sword. Although it is less onerous to prepare an outline, they still have to be judged by somebody. UKCRC doubts the value of having non-expert APMs and PMs judging the outline proposals for Platform Grants and would not wish to see this extended.

We believe that outlines should definitely not be used for the normal responsive mode. Outlines seem to work well for large grants for managed programmes that have a predefined set of strategic objectives.

Outlines may also be useful for multi-disciplinary proposals in which it may not be obvious to which panel or to which research council the proposal should be aimed.

## 5. Potential economic impact?

There is an obvious case for the UK taxpayer to look for a long-term return on research grants. The problem is that short and medium term judgments on such questions can be wildly wrong. UKCRC would (in common with other learned organizations) expect major negative effects on both the quality of research and the long-term benefit to the UK if "economic impact" were used exclusively as a way of judging research proposals.

There is a worry that too much emphasis on economic impact may result in more incremental or development type projects with industrial partners and fewer blue sky research projects. There may well be scope for some blue sky projects which could have economic impact if successful.

Finding experts on economic impact, who are active in industry and in commercial activity, to sit on

panels is recognized to be very difficult. Forecasting future economic impact of an idea is not easy and there are famous examples of industrial leaders getting it wrong.

The "marriage brokerage" and funding of technology transfer projects undertaken by PPARC seems to work well. At all events, given that CS has an interest in all RCs, it would be very useful to share best practice between RCs, and – in the interest of CS – to standardize submission procedures and general frameworks (e.g. proposal submission formats, support for PhD studentships).

## 6. General questions

Our major concern is with the difficulties inherent in the choice of referees. Programme Managers and Assistant Programme Managers (in EPSRC) have no technical knowledge of the area they manage. More use could be made of Panel Chairs and perhaps co-chairs, who could be appointed for, say, 1-2 years and would work with APMs in selecting reviewers for proposals and panel members for the ranking meetings.

We have found cross-disciplinary research, spanning domains of interest of RCs, to range between unproblematic to being very poorly handled. In the past, cross-disciplinary proposals have sometimes suffered double jeopardy in having to go before multiple panels. The RCs have recently stated that this will not happen in the future and one panel will always make the final decision, which we welcome.

## Acronyms

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| APM | Associate Programme Manager |
| BBSRC | RC |
| CS | Computer Science |
| DTAs | Doctoral Training Accounts |
| EPSRC | RC |
| IRCs | Interdisciplinary Research Collaborations |
| IT | Information Technology |
| MRC | RC |
| PM | Programme Manager |
| PPARC | RC |
| RCs | Research Councils |