

**Computing Research Committee
(UKCRC)
Contribution to RAE Consultation**

UKCRC¹ is an expert panel of the IEE² and of the BCS³ for computing research in the UK, and is affiliated to the CPHC⁴. Its members are leading computing researchers from academia and industry.

Executive Summary

1. The primary goal of the RAE should be to inform the funding of long-term, fundamental research and hence increase the international status of the UK's research community.
2. There should be a clear link between research excellence and HEFCE/regional council funding.
3. The assessment should pertain to research only.
4. Computer Science should be treated as a separate UoA and should not be bundled with other UoAs.
5. A five year assessment cycle is appropriate, but step changes in funding can create major difficulties for institutions.
6. The use of suffixes to indicate percentage of staff returned should be simplified. For example, if less than 50% staff are returned, then a suffix 'g' should be an integral part of the RAE rating.
7. Self-assessment and historical ratings are not an appropriate mechanism. Peer review, possibly informed by some algorithmic assessment, is appropriate.
8. The expert panel reviewing Computer Science should be larger than in the previous RAE, to deal properly with interdisciplinary research and the very high volume of submissions. Panel membership is best adjusted after submission to reflect the technical balance of submissions.

The following sections offer more detailed responses to the questions in Annex B.

Cross-cutting Themes

17a. What should/could the RAE be used for?

The RAE can be used

- i. to encourage more/better research, or research concentrated in large groups. Any assessment measure will, by definition, stimulate the activity measured.
- ii. to inform and define the overall level of funding required to support research activity, and the distribution of that total across subjects and institutions.
- iii. for PR and prestige purposes, by both the Councils and the individual institutions.
- iv. for institutional management of research activity.

The UKCRC believes that the principal goal of the RAE should be to promote and improve UK research so that UK researchers are operating at an international level of excellence. Clearly, this is closely related to funding and we believe it is essential that excellence should be properly funded. However, the goal of research improvement means that the research assessment should have a formative as well as a summative role and that attention should be paid to ensuring that appropriate feedback is provided to UoAs to help them plan future development.

The importance of funding excellence means that it is important that an excessive amount of the funding of UoAs operating at an excellent level is not diverted to weaker UoAs by institutional management. We recommend that HEFCE/regional councils take steps to limit the amount of cross-subsidy allowed. Any move to larger UoAs would, in our view, be detrimental as it would weaken the focus of funding on excellence and introduce further political manipulation of research funding within institutions.

The issue of prestige is significant and we recommend that the number of points on the rating scale should not be reduced. However, the current 'a' to 'f' suffix indicating the percentage of staff returned is not effective. Many institutions are 'economical with the truth' and drop the suffix and its meaning is unclear unless the total number of staff in a UoA is known. We recommend that a simpler scheme should be used where a numeric grade X is assigned where more than, say, 50% of the staff in a UoA are returned as research active and a grade Xg used where less than, say, 50% are research active. The 50% threshold is just a suggestion, the actual value might need to be higher. The 'g' signifies

1 Web pages at <http://www.ukcrc.org.uk>

2 Institution of Electrical Engineers

3 British Computer Society

4 Committee of Professors and Heads of Computing

that the rating applies to groups rather than the entire UoA. Dropping of the 'g' suffix should not be permitted.

17b. How often should research be assessed? Should it be on a rolling basis?

We believe that the current 5-yearly assessment of research should be maintained and that cognate disciplines should be assessed at the same time.

We do not favour a rolling assessment model. A rolling model with different groups of disciplines assessed at different times, could mean additional work for institutions because of constant involvement in RAE activities. It also may lead to 'institutional staffing games' where staffing decisions were made dependent on the next grouping of subjects to be assessed. We also note that a rolling assessment could cause major problems for the assessment of inter-disciplinary work where panels in related disciplines were sitting at different times.

17c. What is excellence? Should the RAE be more encompassing?

The RAE should be based on the notion of research as the production of new knowledge (and this will be defined differently in different disciplines). Excellence, therefore, will always be difficult to define. The current assessment for UoA 25 is based primarily upon peer reviewed publications, grant funding, peer esteem, research student activity and subjective judgements of research culture. We believe that this general model should be maintained as the criteria used are comparable with criteria used elsewhere to assess the quality of fundamental research. There are a number of specific points under these criteria that we think are significant:

1. We do not favour the notion of a ranked list of journals/conferences for publication. Such a list would promote 'low risk', traditional research and discourage research in new areas published in workshops and new journals.
2. It is not appropriate to require that all publications during the assessment period be submitted. A small selection (e.g. 4 or 5) is appropriate.
3. We note that citation metrics can be unreliable and discriminate against young staff with emerging publication records, the inclusion of recent work and work in new areas of the discipline in any submission. However, we acknowledge they do give an indication of impact.
4. Continuity of external funding for research in some area is a better indicator of excellence than absolute levels of funding or the source of funding.
5. It is important to ensure that industrial funding for fundamental research is clearly distinguished from industrial funding for short-term consultancy and technology transfer activities.
6. The very limited resources available to the research councils means that much excellent work is unfunded. It is important that research council funding is not given undue weight.

Interaction with industry and the local region is of immense value to universities and industry and it is a matter of policy whether this is explicitly recognised through HEFCE/regional council funding. However, it is not comparable with longer-term research and should not be bundled with it.

17d. Should research assessment determine the proportion of the available funding directed towards each subject?

Ideally, the overall research assessment should be the major determinant for the total funding available for distribution but we recognize this is a political issue. As for division amongst subjects, the allocation must be tempered by the strategic importance and relevance of each subject. It should not be formulaic based on (say) the percentage of excellent ratings as the notion of excellence cannot be standardized across panels.

While universities must have some freedom to redistribute QR funding across disciplines, we believe that universities should be required to account for cross-subsidies across UoAs.

17e. Should each institution be assessed in the same way?

While there may be arguments for assessing institutions with different histories in different ways it seems to us this would result in a more costly and more expensive system.

17f. Should each subject or group of cognate subjects be assessed in the same way?

We understand that different panels had discretion in previous RAEs to define the assessment mechanism appropriate to their UoA. It is clear that there is no 'one size fits all' method and the fairest approach is to use the specialist knowledge of panels to select an appropriate method.

17g. How much discretion should institutions have in putting together their submissions?

The current discretion allowed to institutions leads to all sorts of short-term manipulation in an attempt to maximize ratings and future QR funding. Limiting the discretion available would help reduce some of these distortions to the process. In particular:

1. The rules of submission of research fellows should be quite clear (in 2001, it seems that different universities interpreted these in different ways). We propose that only research fellows with at least 3 years post-doctoral experience may be submitted i.e. they should be at least at the same experience level as a junior lecturer.
2. Currently, decisions about who to submit, whilst giving institutions the ability to trade quantity for quality, are divisive. The current approach discourages involvement of experienced researchers in university management, and makes no allowances for the natural rhythms of an individual's academic activity. It should be the norm that no more than 80% of the staff in a UoA should be returned as research active staff.
3. Temporary teaching assistants are now used by many institutions to help deal with large student numbers. These should be excluded from the staff that should be returned.

17i. Priorities: what are the most important features of an assessment process?

The ideal attributes of an assessment process are:

1. It should help support the achievement of international levels of excellence for UK research.
2. It should be less expensive than previous exercises for both HEFCE and the universities.
3. It should be fair and transparent and minimally susceptible to short-term institutional manipulation to maximize 5-year funding.

Review Mechanisms

The mechanism should be light touch and not take up significant amounts of valuable research time. Any new system, especially if it has an algorithmic element, should be tested against RAE 2001 data to see if there are major divergences. If there are, it is important to understand why.

1. Expert Review

Experts are best placed to make informed judgments, with the help of suitable metrics. We believe that assessment is best at individual level, but provision of the published rating should continue to be at department (or super-group) level. The assessment should pertain to research only.

The other proposed mechanisms (algorithmic assessment, self-assessment and historical ratings are inappropriate on their own for assessment but may have a role in helping inform experts, producing an initial classification of submissions and, perhaps, reducing the expert effort required.

Assessment criteria should be primarily based on peer-reviewed publications, external research funding, the ratio of research students to academic staff, peer esteem and the existence of an active research culture are appropriate. The assessment should be at an individual level and so the return forms should be designed to allow panels to make assessments of individual contributions. This could, for example, mean that information on peer esteem and contributions to the community is explicitly

linked with publications.

2. Algorithm

Algorithmic assessment is not suitable on its own for research excellence, though some metrics could be used to inform subjective judgments. These metrics should be made public. It must be noted that any such metric will have an effect on behaviour.

3. Self Assessment

This is not appropriate. It is potentially divisive, could cause major institutional pressures for UoAs to over-estimate and would require a high-cost validation process to check submissions.

4. Historical Ratings

Assessment on a historical basis is not appropriate. It would encourage a slow rate of change for excellent researchers, and frustration for those at the bottom of the scale. The assessment of “value for money” would create yet another, onerous assessment procedure, for little effect.

Other issues

1. Rating scale

The current model with subdivisions of Bands 3 and 5 is not transparent. We recommend the use of a 7-point scale with bands on the scale numbered consecutively. As discussed above, we recommend that a suffix ‘g’ is used to indicate UoAs which return less than 50% of staff.

2. Interdisciplinary research

The experience of UKCRC members is that inter-disciplinary research is difficult to handle well and depends heavily on the expertise of the review panel. Any algorithmic assessment cannot deal properly with inter-disciplinary research and this would be a significant problem for UoA 25 where research (e.g. in e-science) is increasingly interdisciplinary. We reiterate here the problem of assessing inter-disciplinary research if a rolling assessment model is adopted.

3. A two tiered approach

We might favour a two-tiered approach to assessment: the first stage based on metrics and a second stage (for those who “passed” the first stage) involving bidding for centres of excellence (to determine funding). However the mechanisms, workloads and proportions of funding involved would have to be very carefully considered, in light of the comments we have raised earlier.

4. Constitution of the review panel

The review panel for Computing Science needs to be larger in size to properly deal with interdisciplinary research and the very large number of submissions. The panel membership should be adjusted after the submissions have been received to reflect the technical balance of the submissions. While broadening the constitution of the review panel to include industrialists with knowledge and experience of research is an attractive idea, it is unrealistic to expect a significant degree of commitment from industry to the RAE process as they gain little direct benefit from it.

We support the inclusion of more international reviewers in the panel who should participate throughout the process. However, these reviewers would have to be paid at reasonable consultancy rates and this would significantly increase the direct RAE costs to HEFCE. Superficial international involvement is not, in our view, worthwhile.

<http://www.ukcrc.org.uk>

28 November 2002