



*Advancing
Astronomy and
Geophysics*

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The RAS response to the consultation document on the RAE (Research Assessment Exercise) follows.

The [document](#), from a committee comprising representatives of the four UK higher education funding bodies and a number of government departments, was appointed to identify a metrics-based system to assess research quality and allocate QR research funding at an institutional level, with the following objectives:

The new system should:

- reward excellence in research of all types, from curiosity-driven to user-focused
- encourage collaboration
- support inter-disciplinary research
- minimise the burden on HEIs
- be open to and apply equally to all HEIs
- be simple, transparent and cost-effective
- result in a funding stream to an institution
- allow HEIs to plan effectively

The Committee is seeking responses to 8 questions which will form the basis of its recommendations. The questions, and the responses of the RAS (in italics) follow:

1 Which, if any, of the RAE 2008 panels might adopt a greater or wholly metrics-based approach?

Comments: The subject areas covered by the Society are Physics, Chemistry, Applied Mathematics, Earth Sciences. In principle these are amenable to a greater element of metrics-based assessment, but we have a fundamental concern that the latter do not appear to measure research quality output directly.

2 Have we identified all the important metrics? Bearing in mind the need to avoid increasing the overall burden of data collection on institutions, are there other indicators that we should consider?

Comments: The metrics proposed are all based on volume of research funding. A minor element of research quality, derived from a particular moment in time, enters into model D. What is lacking is an independent metric that measures research quality.

3 Which of the alternative models described in this chapter do you consider to be the most suitable for STEM subjects? Are there alternative models or refinements of these models that you would want to propose?

Comments: We are not happy with any of these metrics if they were to be the sole criterion for WR funding. Astronomy, geophysics and solar system science have benefited

from the current system in which a high weighting is given to research quality. Within the UK, astronomy and solar system science are among the top-ranked sciences internationally, as measured for example by citations.

4 What, in your view, would be an appropriate and workable basis for assessing and funding research in non-STEM subjects?

Comments: *Appendix 2 of the consultation document offers some ideas here.*

5 What are the possible undesirable behavioural consequences of the different models and how might the effects be mitigated?

Comments: *Because all models have the undesirable tendency to transfer funding broadly from departments with high research quality to those of low research quality, universities would be driven to encourage activities which bring in a large volume of funding, regardless of research quality, and to discourage high quality research groups because they do not bring in enough research funding. Similarly because some models transfer QR funding quite drastically between subject areas, universities will be tempted to reduce activity in areas whose funding is reduced. For example under model A, where Applied Mathematics departments suffer quite badly, our theory groups, which are a strong feature of UK astronomy and solar system science research, could be damaged by this.*

Another undesirable feature of all models is the large fluctuations in funding which would be experienced by universities, which could lead to large-scale redundancies and department closures. This would be partially mitigated by the proposal to cap any changes at 5%.

6 In principle, do you believe that a metrics-based approach for assessment or funding can be used across all institutions?

Comments: *Only if a method of rewarding research quality, as well as research volume, can be found. The current models would lead to huge changes, positive and negative, at smaller institutions.*

7 Should the funding bodies receive and consider institutions' research plans as part of the assessment process?

Comments: *These plans are not really valuable unless there is an audit process to make sure they are implemented.*

8 How important do you feel it is for there to continue to be an independent assessment of UK higher education research quality for benchmarking purposes? Are there other ways in which this could be accomplished?

Comments: *We believe that an independent assessment of research quality should continue to be an element of the funding process. The panels could make much greater use of metrics (publication rates, citation scores, grant income, PhD student statistics, numbers of fellowships and awards) and the amount of material required to be submitted could be greatly reduced. However it is hard to see how the peer review element to arrive at a judgement from these statistics and submissions can be avoided.*

19 September 2006)