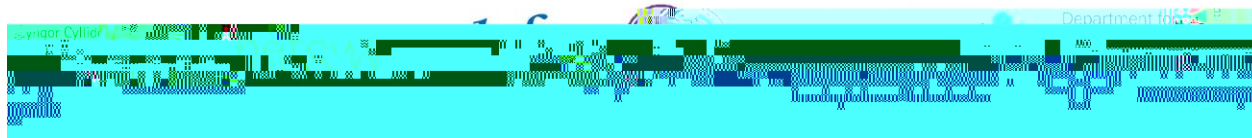


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Consultation on the second Research Excellence Framework

This Word version of the response form is available to help respondents prepare responses before submitting them through the online form. Do not respond to the consultation using this Word form. Only responses received through the online form will be reviewed and included in our analysis.

1. Respondent details

Responses to this consultation are invited from any organisation, group or individual with an interest in research or research assessment. We will publish an analysis of the consultation responses. We may publish individual responses to the consultation in the summary. Additionally, all responses can be disclosed on request, under the terms of the relevant Freedom of Information Acts across the UK. Responses to this consultation are unlikely to be treated as confidential except in very particular circumstances. Please note that each question has a limit of 500 words.

Please indicate who you are responding on behalf of

- As an individual
- Higher education institution
- X Subject association or learned society
- Representative body
-

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4. Expert panels

3a. Do you agree that the submissions guidance and panel criteria should be developed simultaneously?

Yes

No

Comments:

We believe the benefits outweigh the disadvantages

3b. Do you support the later appointment of sub-panel members, near to the start of the assessment year?

Yes

No

Comments:

Generally, we much prefer early appointments and the reason is precisely that stated in paragraph 3: we have concerns that broad sub-panels (of which Mathematical Sciences is definitely one, formed by amalgamating several previous RAE UoAs) certainly require more in-depth expertise to adequately cover the area.

In REF2014 there was concern from sections of the mathematical sciences community, during the stages of REF preparation, that the UoA panel was nowhere near representative enough to do its job. Ultimately, we believe actions were taken that successfully mitigated these concerns, but had they unchecked it could have negatively impacted on the REF's credibility. Hence, we believe early and comprehensive appointments are to be recommended.

Further, 1. Sub-panel members need lots of time to prepare for REF; 2. The late appointment of a REF sub-panel member could impact heavily on a small department where teaching and admin will need to be prioritised.

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diversity (E&D) training of the panels.

We are concerned at 37 which suggests that nominating bodies provide statistical information reg
E&D characteristics and provide an account of how

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does not have to be an integer. For example, the average could be three but it could also be 2.5.

Since an aim of the new REF is to decouple individual outputs, along with the desire to keep the burden manageable, we strongly advocate that a sampling approach is adopted. For example, all submit between one and four of their best outputs, the average number of outputs for the submission maintained at 2 (or 2.5 or 3, eg.) and then a sampling strategy is used to choose the outputs to be assessed. Sampling is an important and valid tool precisely designed for this situation. Something bespoke might be needed for UoA submissions with very small numbers of outputs. For example, a submission with number of outputs less than some threshold might result in all their outputs being assessed. We also believe that sampling might lead to more accurate assessments as more time might be available per output, as described in our response to 9b.

9b. The maximum number of outputs for each staff member?

We advocate avoiding a situation where, say, seven members of staff 'carried' a 20-strong unit. The worst kind of gaming would result if there were allowed a free-for-all in which it is completely acceptable just to put in your research stars. An upper bound on the number of publications (we advocate FC) should prevent such behaviour.

Having a high number of publications from 'stars' will also make it much more difficult to discern differences between UoAs and thus reduce the usefulness of the exercise. We also feel that this goes against the ethos of the next REF to mitigate issues over staff selection.

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10. What are your comments on the issues described in relation to portability of outputs, specifically:

10a. Is acceptance for publication a suitable marker to identify outputs that an institution can submit and how would this apply across different output types?

The key points we wish to make here are: (i) the "acceptance date" of a publication is increasingly becoming a vague and even meaningless concept in many disciplines; and (ii) the REF should as far as possible welcome submission of ANY output which conforms to open access conditions, but any output submitted to more than one REF should be ruled ineligible (to avoid doublecounting)

In fact, if an article was accepted before the submission deadline but published (EarlyView, or in an journal online, or in actual print) after the deadline, as long as it was not used for a previous REF, it should be permissible.

In some subject disciplines the practice of journal publication is dying and the cutting edge research happens around the open access repositories. Hence, at the very least the quality of the acceptance date is different to a standard journal, plus the REF panels have less information on the perceived quality and correctness of the article and, hence, it may well be more burdensome to evaluate such articles.

10b. What challenges would your institution face in verifying the eligibility of outputs?

We would welcome more guidance on how open-access friendly repositories are to be viewed in the REF. For example, top publications accepted by Journals might have been on the arXiv (e.g.) for years: e.g. which REF should they count to? Similarly, an arXiv article in the current REF period might only be published in a journal in the next one. In other words, acceptance timestamps can be manipulated especially when journal review times in the mathematical sciences can be inordinately long.

In summary: it should not be possible for publications to count more than once.

10c. Would nonportability have a negative impact on certain groups and how might this be mitigated?

The difficulties and costs of defining fairly how credit might be shared between institutions when an author moves are significant, given the wide range of publication practices across disciplines.

Overall, we have a strong view that the current REF approach is acceptable. In particular, we do not want to restrict job opportunities for early career researchers or those coming into the system partway from outside of the UK. Any proposal must be tested against this criterion.

We accept that "rich" HEIs should not be able to "buy" a publication from 2015 for the REF2021, and suggest at the most a compromise that outputs dated within two years of the REF deadline are port-

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11. Do you support the introduction of a mandatory requirement for the Open Researcher and Contributor ID to be used as the staff identifier, in the event that information about individual staff members continues to be collected in REF 2021?

Yes

No

Comments:

It is possible that some form of staff identifier will be mandatory in future. We would prefer to use an established independent/non-profit/community-based system such as ORCID, rather than HEFCE effort reproducing it.

12. What comments do you have on the proposal to remove Category C as a category of eligible staff?

We agree with the suggestion to abolish Category C as an eligible staff category.

13. What comments do you have on the definition of research assistants?

Please see answer to question 8. Generally, we are happy with the REF2014 definitions. Again, if HEFCE can provide advice in specific circumstances or some degree of auditing is conducted?

14. What comments do you have on the proposal for staff on fractional contracts and is a minimum of 0.2 FTE appropriate?

We agree that staff on part-time contracts should be eligible, with a minimum FTE requirement (we are happy with 0.2 FTE). We support the proposal for a short supporting statement (as in para 62) to be

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17. What are your comments in relation to the assessment of interdisciplinary research in REF 2021?

It is not clear to us that HEFCE, RCUK and government really understand the value, volume and importance of interdisciplinary research. This maybe because everything becomes organized according to historical silos which are difficult to break out of, due to organisational and bureaucratic structures. In any case, a large amount of important single-discipline research is conducted in traditional silos and is easy to identify and assess. However, a large amount of research is conducted between disciplines and across multiple disciplines in teams: the proposed new structures will help, but maybe a little bit. For example, the interdisciplinary champions will still be tied to a panel and evaluation of interdisciplinary research strongly tied to that panel. We think that maybe a different panel structure might be required. Maybe an interdisciplinary panel for each main board and then a REF interdisciplinary panel? Overall, we think that the question of assessing and encouraging excellent interdisciplinary research maybe requires wholesale change in the future REF.

Interdisciplinary research is of vital importance to the mathematical sciences and is the lifeblood of many areas of statistics. We support suggestions in paragraphs 7 (subject to the caveats above). The Mathematical Sciences UoA will probably require a larger number of interdisciplinary champions as mentioned in 7.1 due to the breadth of interdisciplinary research intersecting with the mathematical sciences (this is because nearly every discipline in the REF possesses a quantitative side which can properly be explored using mathematical and statistical techniques. Further many disciplines are becoming increasingly numerical/data driven which leads them to work with mathematical and statistical scientists).

We strongly advocate the need for explicit and clear assessment criteria for interdisciplinary work. Good guidelines have been developed (e.g. "Evaluating Interdisciplinary Research: a practical guide" (Prof. Veronica Strang and Prof. Tom McLeish)

<https://www.dur.ac.uk/resources/ias/publications/StrangandMcLeish.EvaluatingInterdisciplinaryResearch.July2015.pdf>

It is vital that research advances are considered in the context of the interdisciplinary field. Thus, a paper in mathematical biology must be judged against its contribution to mathematical biology, not its contribution to mathematics, nor its contribution to biology.

Further, it should be noted that much interdisciplinary research (output and impact) occurs in places with less well-established records than single-discipline "silo" research. Hence, the traditional markers of research excellence (top journals, conferences, etc) will probably not be valid for interdisciplinary outputs which makes their assessment harder.

18. Do you agree with the proposal for using quantitative data to inform the assessment of outputs, where considered appropriate for the discipline? If you agree, have you any suggestions for data that could be provided to the panels at output and aggregate level?

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21. Do you agree with the proposal for the funding bodies and ~~Research Councils~~UK to align their

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30. Do you agree with the proposed timeframe for the underpinning research activity (January 2000 to 31 December 2020)?

- Yes
 No

Comments:

The Mathematical Sciences UoA would argue strongly for a longer time window, as impact often takes longer, sometimes due to the multiple stages of impact pathway that ideas in matP <</MCIE

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This proposal is attractive in principle, but will likely be burdensome and ~~time~~ ~~consuming~~ in practice. We continue to be deeply concerned about the lack of rigour in the assessment of impact case studies the "wider impact" concept is often impossible to evidence for purer subjects (hence we welcome the possibility of alignment of the REF and RCUK definitions of impact).

32b. The development of guidelines for the use and standard of quantitative data as evidence for impact?

The main problem here is the lack of evidence ~~on~~ ~~the~~ reliability and quality of and comparability between the various metrics that exist. Usually, little is understood about metrics' mean performance and even less on their variability and ~~co~~ variability. If robust evidence was supplied by HEFCE or associated bodies then this could be evaluated and adopted. However, we see little sign or prospect of such evidence. For example, many metrics vary wildly between disciplines. Discipline corrected versions exist but these tend to be at a ~~co~~ coarse scale and also individuals/outputs often overlap several disciplines. Hence, we believe such metrics will likely severely disadvantage disciplinary work.

32c. Do you have any other comments on evidencing impacts in REF 2021?

Narratives connecting bodies of work and sets of activities by a researcher/~~his~~ ~~group~~ should be allowed in evidencing impact.

33. What are your views on the issues and rules around submitting examples of impact in REF 2021 that were returned in REF 2014?

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The 'reach' of impact can clearly grow over time so we support the principle of using additional impact from old case studies. This also rewards long impact and long term relationships which are vital and common in the mathematical sciences. Narratives need to set out clearly the 2014 status quo and the new impact claimed. Clear instruction should be given on how much added information needs to be provided in the second submission, with a hypothetical example.

We agree with the idea that no more than a certain percentage of case studies should be submitted based on REF2014 cases (25%?).

9. Environment

34a. Do you agree with the proposal to change the structure of the environment template by introducing more quantitative data into this aspect of the assessment?

Yes

No

Comments:

We approve of the use of a more structured template for the environment part of the submission. However, extremely careful thought will have to be given as to what additional metrics are sought. Such metrics MUST be discipline specific: such robust metrics are difficult to identify.

Careful attention must also be paid to the influence of certain metrics that might be collected as part of the environment submission. In past exercises (SRF and RAE) it has been the case that some academic judgements of key quantities (such as outputs) has not discriminated as much as the entire research community might have expected. However, the inclusion of influential metrics can dominate the overall result, purely due to their discriminative power. The effect of inclusion of any metrics can also be tested by panels to ensure that they do not dominate the overall judgement. Overall, the point is that not only are metrics potentially dangerous on their own, they can be devastating when combined in thoughtless ways, especially when they are measured on different scales and/or have different levels of variability.

It is also vital that environment is not just a proxy for size of UoA. Many parts of the mathematical sciences community felt that the environment measure (REF2014) became simply an elaborate means of rewarding larger departments. Appropriate steps should be taken to prevent this recurring. One idea might be to tension environment assessment to what might be expected by a UoA of a given size. I.e. what is a UoA providing over and above what might be expected of a department of that size, i.e. value added. Formal benchmarking would probably be too cumbersome, but some qualitative value added could well become part of the UoA criteria.

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11. Outcomes and weighting

40. What comments do you have on the proposed approach to creating the overall quality profile for each submission?

These seem reasonable.

However, we would draw your attention to the Royal Statistical Society Working Group on Research Excellence Framework (REF) League Tables report

<http://www.rss.org.uk/Images/PDF/about/pressreleases/rsspressreleaseref-leaguetablesreport-11-05-2015.pdf>

which draws attention to the fact that the "actual effect of **Outputs on the reported overall quality** profiles was markedly less than the announced weight of 65% for Outputs might be taken to imply". This is partly due to the low variation between subprofiles for Outputs. Recommendation R.2 of the Work Group's report is that the 'overall profiles' should be made more informative, so at least observers of the REF outcome are fully informed of these sources of variability and the likely effects on the overall

41. Given the proposal that the weighting for outputs remain at 65 per cent, do you agree that the overall weighting for impact should remain at 20 per cent?

Yes

No

Comments:

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community. However, we believe it is vital to be aware of any adverse consequences of a higher level impact weighting for the flourishing of high quality mathematics research; (ii) ensure that REF and Research Council definitions of impact are aligned as proposed above, before any increase is implemented; and (iii) not change too many features at one time, so allow a revised definition of impact to bed down before any potential increase.

42. Do you agree with the proposed split of the weightings between the institutional and submission level elements of impact and environment?

- Yes
 No

Comments:

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44. Are there proposals not referred to above, or captured in your response so far, that you should be considered? If so, what are they and what is the rationale for their inclusion?

A. What about calibration? It is important to calibrate assessors both within and between panels. Within favourable or harsher treatment than another. It is easily dealt with by the chair allocating outputs pairs (or more) of assessors in such a way as to make the assessment graph highly connected, re independent scores from each, and then inferring assessor bias and true scores for each output, i CwC method <http://www.calibratewithconfidence.co.uk/model>

The method can also incorporate declared confidences/uncertainties in each score. Between panels is essential because however much the authorities say that there is no basis in the REF for comparison in different UoAs, people do it, institutions base strategic decisions on it, the REF claims consistency across panels! This can be achieved by much more reassessment of outputs, in particular, having them scored by both the home and the other UoA. The CwC method will show relative panel biases and error crosspanel comparison. There is a wide sci Q q 5as5(pa)4ott Eis7?.2 h(en pa)3(n)14(els)5(is)6()]