

Hefce Consultation – REF2021
Response – The Physiological Society

Overall approach

Question 1: Do you have any comments on the proposal to maintain an overall continuity of approach with REF 2014, as outlined in paragraphs 10 and 23?

Unit of Assessment structure

Question 2: What comments do you have about the Unit of Assessment structure in REF 2021?

Physiology has been passed around Units of Assessment over the history of the RAE and REF2014, with the specificity of the panels seemingly decreasing with each iteration. The understanding of physiology has therefore been diluted, and the discipline has unfortunately suffered accordingly since the last “Physiology” panel in 2001. In RAE2008, physiology was specifically mentioned in the description of UoA15 Pre-clinical and Human Biological Sciences, but by REF2014 this had become absorbed into Biological Sciences, with physiology not being mentioned by name. One physiologist and 2014 panel member described this as giving the impression physiology was “squeezed into an irrelevance”.

Due to this categorical uncertainty some Higher Education Institutions submitted their physiology research to Neuroscience as part of UoA4, some to UoA1 Clinical Medicine, and some to Biological Sciences. Anecdotally, some decisions on where to submit were made based on the identity of the panel members, in order to avoid “tough judges”. This led to a splintered picture of physiological research and highly variable results. In REF2021, greater specificity should be given in the description of Units of Assessment and the guidance the UoA to which work should be submitted.

The use of “Neuroscience” in the title of UoA4 is misleading as this term covers a broad, multidisciplinary range of research. This spans basic cellular or molecular biology all the way to applied brain physiology bordering on behavioural psychology. This topic will slice off a proportion of the research from many disciplines, leading again to asymmetric judging across a discipline.

Expert panels

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

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

Question 4: Do you agree with the proposed measures outlined at paragraph 35 for improving representativeness on the panels?

Question 5a: Based on the options described at paragraphs 36 to 38, what approach do you think should be taken to nominating panel members?

Question 5b: Do you agree with the proposal to require nominating bodies to provide equality and diversity information?

Question 6: Please comment on any additions or amendments to the list of nominating bodies.

Staff

Question 7: Do you have any comments on the proposal to use HESA cost centres to map research-active staff to UOAs and are there any alternative approaches that should be considered?

While HESA cost centres are not a popular differentiator between UoAs, no obvious viable alternative presents itself.

Question 8: What comments do you have on the proposed definition of 'research-active' staff?

Question 9: With regard to the issues raised in relation to decoupling staff and outputs, what comments do you have on:

- a. The proposal to require an average of two outputs per full-time equivalent staff returned?**
- b. The maximum number of outputs for each staff member?**
- c. Setting a minimum requirement of one for each staff member?**

We express our support for setting a minimum of one output per staff member, otherwise the intention to include all research-active staff is significantly undermined. Experience from REF2014 shows that a great deal of the internal bureaucracy came from deciding which researchers would be returned. Allowing a minimum of zero outputs would only replicate these difficulties. That being said, it is recognised that if the total number of outputs rises significantly above that considered in REF2014 then the burden placed on HEIs and, especially, panel members, will be severe.

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

- a. Is acceptance for publication a suitable marker to identify outputs that an institution can submit and how would this apply across different output types?**
- b. What challenges would your institution face in verifying the eligibility of outputs?**
- c. Would non-portability have a negative impact on certain groups and how might this be mitigated?**
- d. What comments do you have on sharing outputs proportionally across institutions?**

Question 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?

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

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

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

Collaboration

Question 15: What are your comments on better supporting collaboration between academia and organisations beyond higher education in REF 2021?

Outputs

Question 16: Do you agree with the proposal to allow the submission of a reserve output in cases where the publication of the preferred output will postdate the submission deadline?

Question 17: What are your comments on the assessment of interdisciplinary research in REF 2021?

Physiology is often affected by the handling of interdisciplinary research as it is a broad discipline which underpins much of the biological sciences and significant areas of clinical research. As this is the case, physiology research is often incorporated in large collaborative projects which involve a number of disciplines and a number of HEIs. The perception up to now has been that projects between HEIs are discriminated against, with problems in sharing credit for the impact of the research. Instead of this barrier, REF should acknowledge the effectiveness of inter-HEI cooperation in facilitating sophisticated interdisciplinary research and amplifying impact.

Interdisciplinary research can lead to the same paper being submitted by multiple institutions. In previous cases, there has been a requirement for cross-checking of scores in this situation if both institutions submit to the same UoA. However, the presumption of cross-panel discussion if the work was submitted to different UoAs (due to the problems discussed above, see Q2) has been inaccurate. REF2021 should make sure to keep effective track of interdisciplinary work submitted by multiple institutions and/or to multiple panels in order to ensure consistency in its assessment.

Interdisciplinary research often results in large papers with a significant number of authors. This leads to problems in how to handle the author position and relate it to their contribution to the work. Even within the life sciences, different disciplines have different conventions on ordering authors on a publication so there can be difficulties in arranging a compromise on how to consider the positioning of multiple authors. This gets worse when the work has been split across multiple institutions. Greater clarity should be given in guidance on how to consider author positions. Even better, manuscripts should be encouraged to explicitly detail author contributions so their significance can be accurately judged.

The proposal for interdisciplinary “champions” was not viewed favourably by our experts and previous panel members, as the feeling was that all panel members should have sufficient experience to appreciate the importance of interdisciplinary work and determine the most effective panels to cross-refer work to.

Question 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?

It is important to be careful when applying quantitative metrics to assess physiology outputs.. As a discipline which is centred around basic investigative research, the citation half-life for physiology papers is often very long, with impact and application often coming years or decades in the future. Therefore, over the timescale of the REF exercise, quantitative measures are unlikely to suggest the true quality of the work and impact negatively on the discipline as a whole. Metrics would only be of benefit if comparing like with like, on a basis specific to physiology.

Similarly, were journal impact factors to be considered as a quantitative measure, physiology would likely be disadvantaged. As the discipline is quite diverse there are a number of publishing routes which can be chosen including highly specific journals in fields such as neuroscience, cardiovascular science etc, or broader journals covering general physiology. Each field has its own journal hierarchy, with many such as *The Journal of Physiology* being prestigious and well-respected, but this is not reflected in the impact factors when compared to other disciplines across the biosciences, not least across all wider scientific fields. If impact factors are calculated over a longer time period, such as 10-year impact factors, physiology journals seem rather more successful than using 2-year impact factors.

Impact

Question 19: Do you agree with the proposal to maintain consistency where possible with the REF 2014 impact assessment process?

Previous assessment of impact in REF2014 was felt to tend to be quite generous, with the judging of impact conducted less robustly than the assessment of research quality. There was little investigation of the veracity of asserted impact. Some panels felt that they had to be generous in impact evaluations for the benefit of the sector they were reviewing, as any hint that the work was not impactful could lead to reductions in support in the future.

There were also problems with the parity of different types of impact, with some focused on revenue generation to the exclusion of other valid types of impact through public engagement, outreach and other less quantitatively tangible factors.

As discussed above, physiology research often has a long lead time before impact is demonstrated as basic work has to go through translational stages before significance can be demonstrated. This is especially the case for *in vivo* work where initial findings must be shown to have a behavioural significance in the real world. There is often a long period between initial discoveries and a publication demonstrating impact. This has been highly deleterious to physiology as a discipline, as the short-term nature of the REF has led to biological science faculties favouring subjects such as molecular biology or biochemistry over physiology when setting departmental priorities, as these are more likely to bring about a successful REF.

Question 20: What comments do you have on the recommendation to broaden and deepen the definition of impact?

This would be generally supported, especially if it improved the processes for tracking the impact resulting from basic research.

Question 21: Do you agree with the proposal for the funding bodies and Research Councils UK to align their definitions of academic and wider impact? If yes, what comments do you have on the proposed definitions?

Question 22: What comments do you have on the criteria of reach and significance?

Question 23: What do you think about having further guidance for public engagement impacts and what do you think would be helpful?

We would support greater guidance on assessing public engagement impact. In the past this has split panels in some UoAs, as basic research scientists were unsure how to effectively assess engagement activities. It later came to light that social sciences panels had unanimously awarded high scores for the same work. Therefore, guidance which would improve the consistency of assessment would be welcome, and could also serve to reduce game-playing in the selection of UoAs.

Question 24: Do you agree with the proposal that impacts should remain eligible for submission by the institution or institutions in which the associated research has been conducted?

Question 25: Do you agree that the approach to supporting and enabling impact should be captured as an explicit section of the environment element of the assessment?

Question 26: What comments do you have on the suggested approaches to determining the required number of case studies? Are there alternative approaches that merit consideration?

Question 27: Do you agree with the proposal to include mandatory fields (paragraph 96) in the impact case study template to support the assessment and audit process better?

Question 28: What comments do you have on the inclusion of further optional fields in the impact case study template (paragraph 97)?

Question 29: What comments do you have on the inclusion of examples of impact arising from research activity and bodies of work as well as from specific research outputs?

Question 30: Do you agree with the proposed timeframe for the underpinning research activity (1 January 2000 to 31 December 2020)?

Question 31: What are your views on the suggestion that the threshold criterion for underpinning research, research activity or a body of work should be based on standards of rigour? Do you have suggestions for how rigour could be assessed?

Question 32: Evaluation of REF 2014 found that provision of impact evidence was challenging for HEIs and panels. Do you have any comments on the following:

- a. The suggestion to provide audit evidence to the panels?
- b. The development of guidelines for the use and standard of quantitative data as evidence for impact?
- c. Do you have any other comments on evidencing impacts in REF 2021?

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

Environment

Question 34a: Do you agree with the proposal to improve the structure of the environment template and introduce more quantitative data into this aspect of the assessment?

Question 34b: Do you have suggestions of data already held by institutions that would provide panels with a valuable insight into the research environment?

Question 35: Do you have any comment on the ways in which the environment element can give more recognition to universities' collaboration beyond higher education?

Question 36: Do you agree with the proposals for awarding additional credit to units for open access?

Question 37: What comments do you have on ways to incentivise units to share and manage their research data more effectively?

Institutional-level assessment

Question 38: What are your views on the introduction of institutional-level assessment of impact and environment?

Question 39: Do you have any comments on the factors that should be considered when piloting an institutional-level assessment?

Outcomes and weighting

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

Question 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, this is felt to be appropriate weighting.

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

Proposed timetable for REF 2021

Question 43: What comments do you have on the proposed timetable for REF 2021?

Other comments

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

It was highlighted to us that previous iterations of REF and RAE have not dealt successfully with review papers submitted as outputs. This is leading to the disincentivising of writing review articles at all. With their evaluation criteria being the same as research papers, it can be hard to demonstrate the conceptual advance or novel data required for 3* or 4* scores. In some cases, journals explicitly prohibit new data being introduced in a review paper, insisting that everything cited has been published and peer reviewed. This situation overlooks the usefulness of review papers in scientific fields. Many review papers submitted to past exercises have been judged as

ineligible outputs despite being excellent reviews on their own terms. In disciplines such as physiology in particular which are highly integrative, this drawing on a number of disciplines means review papers are highly useful.