

Guidance on the Implementation of DORA Recommendations for Research Assessment

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Background

As a signatory to the San Francisco Declaration on Research Assessment (DORA)¹, the University of Cambridge is committed to three actions:

- (i) to eliminate journal-based metrics in research assessment of individuals;
- (ii) to be transparent and consultative about how research quality will (and won't) be evaluated;
- (iii) to encompass a wide range of potential research impacts, reaching beyond a narrow focus on peer-reviewed publications and including contributions to open science, translation of research to clinical and other applications, public engagement and policy impacts.

The formulation of discipline-appropriate plans for action in response to DORA has been delegated by the University to Schools, thus Schools need to fine-tune guidance for the implementation of DORA in line with the research quality values and metrics of the major domains of scholarship and research they represent across the University.

The School of Biological Sciences and the School of Clinical Medicine, recognising substantial common ground in research values and metrics across the life sciences, convened a joint committee to propose how to respond to DORA recommendations, to be considered for implementation by both School Councils in October 2021.

Recommendations

In general, the Schools' response to DORA will be implemented in accordance with the University's commitment to transparency, fairness, integrity and diversity in all matters of staff evaluation, and with staff feedback taken into account. Specific guidance for recruitment, probation and promotion procedures in each School will need to be updated in light of these recommendations.

- *Staff Guidance and Support:* We recognise that both Schools will need to take steps to ensure that appropriate guidance and information is made available to all staff, and provided as a mandatory requirement to assessors formally responsible for evaluating research quality. The University will develop a short online guide to DORA as part of its unconscious bias training package, and it is recommended that all those who are involved in evaluating research quality, for example in the Academic Careers Pathway (ACP) scheme, complete relevant on-line training when it becomes available in future. Assessors will be required to confirm that they have understood and adopted the relevant guidance and information prior to carrying out any research quality assessments.
- *Learning and Improvement:* It is important that the Schools regularly review the effectiveness of their research assessment policies. Reviews may include, for example, reflexive evaluation of an individual assessment exercise (e.g. an annual promotion round), an annual or bi-annual appraisal of several assessment exercises, and applicant and evaluator feedback. Policies and guidance will, if necessary, be modified in light of such evaluation, in the spirit of continuously seeking to improve how we recognise and assess research quality.

¹ <https://sfdora.org/>

We now summarise our recommended responses (in black font) to each of the three actions expected of DORA signatories (as excerpted verbatim from the DORA website in blue font).

Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions.

Both Schools will eliminate journal-level metrics (JLMs), such as the widely-misused journal impact factor, from all formal research evaluation processes. We note that the Schools do not currently use JLMs routinely for research evaluation or recruitment processes. Nonetheless, we will take additional steps, for example: we will ensure that individuals being evaluated, and external reviewers, are aware that we do not accept JLMs as a proxy for research quality; the use of JLMs will be explicitly prohibited from documents prepared by applicants or assessors; *and* chairs of School committees for ACP and other career development programmes will be asked to regulate informal use of journal titles as proxies for research quality in committee discussions about candidates. The use of terms such as “target journal” and “high impact journal” in recruitment, probation, and promotion processes, guidance documents and advertisements, will not be approved by School HR review; terms such as “high quality research” or “influential research” may be preferred to the words “impact” and “impactful”.

The Schools recognise that journal metrics and titles have become embedded in perceptions of research quality and it will take some time to fully eliminate the unconscious bias that equates journal level metrics with the quality of an individual research output. Mitigation measures such as redacted publication lists (providing only the DOI for each paper) are currently not favoured by the Schools because of the extra workload associated with retrieving publications when many candidates are being assessed, and because a redacted form of citation is contrary to the general DORA recommendation that research evaluation should be informed by complete information on all relevant outputs. It is therefore imperative that assessment committees are resolute in ensuring that output quality, not publication venue, is the primary indicator of research quality.

Be explicit about the criteria used to reach hiring, tenure, and promotion decisions, clearly highlighting, especially for early-stage investigators, that the scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published.

Research excellence or quality are abstract concepts that are difficult to measure and should ultimately be decided by competent and impartial assessors who have the necessary subject knowledge and expertise to make qualitative judgements about the content of research outputs.

Any evidence to be used in the assessment process will permit fair and equal comparison between researchers and will be appropriate for the purposes of the evaluation. The limitations of any evidence or methods will be considered.

The Schools will additionally ensure that the objectives, criteria, range of admissible evidence, methods, and interpretation of results in any assessment process are set out in guidance for assessors and those submitting materials for assessment. All those subject to evaluation will be treated equally and impartially. Evaluation will consider only such material and information as is submitted for assessment in accordance with the guidance produced for the process in question.

The use of metrics may be considered as part of a complete assessment of publications submitted for evaluation of individuals in both Schools. However, such metrics may only inform and not supplant expert evaluations and any quantitative bibliometrics must be used carefully, recognising any biases associated with them. Use of a single metric alone to rank or evaluate individuals is not acceptable.

Specifically in relation to bibliometrics, we recommend the following approach:

- **Journal level metrics (JLMs)** – not admissible for any assessment processes
- **Author level metrics (ALMs)** – candidates may provide ALMs based on citations, if they wish, as part of the documentation submitted for assessment processes
- **Paper level metrics (PLMs)** – candidates may provide PLMs based on citations, if they wish, as part of the documentation submitted for assessment processes;
- **Attention metrics** – candidates may provide attention metrics, if they wish, as part of the documentation submitted for assessment processes;

Author level metrics, e.g., the Hirsch or h-index, are unsuitable for comparing between individuals in different disciplines or at different career stages, or between individuals who have (or have not) taken career breaks. While ALMs may be provided as part of an individual's narrative to highlight the influence of their research portfolio, or to demonstrate change in their research trajectory over time, they should not be used by assessment committees to rank or compare individuals.

Paper level metrics that are based on citations of individual research outputs, e.g., the Relative Citation Ratio (RCR), can be indicators of the influence a particular paper has had. Citation-based PLMs provided by applicants may be taken into account by reviewers, but not as the sole basis for deciding a short list or rank ordering of short-listed candidates.

Attention metrics, e.g., the Altmetric score, provide information about the amount of attention a paper has received from general media, social media, blogs etc, as well as citations in peer-reviewed articles. Due to their composite nature, these metrics are not reliable as a guide to the scientific community's evaluation of the quality or impact of a particular publication.

In short, the use of author-level and paper-level citation-based metrics, and attention metrics, may be considered as part of a comprehensive assessment of peer-reviewed publications submitted for evaluation of individuals by both Schools. However, such quantitative bibliometrics must be used carefully, recognising any biases associated with them, and may inform but must not supplant expert evaluations.

Some preliminary guidance on which bibliometrics are considered most suitable for specific purposes are provided in **Annex 1**. More general guidance about appropriate use of metrics, and the strengths and weaknesses of various metrics is available from the University Library² and the Metrics Toolkit website³.

For the purposes of research assessment, consider the value and impact of all research outputs (including datasets and software) in addition to research publications, and consider a broad range of impact measures including qualitative indicators of research impact, such as influence on policy and practice.

While peer-reviewed publications will retain a central place in research quality assessments in both Schools, the admissible scope of research assessments will be widened so that peer-reviewed publications or related metrics are not the only focus of evaluation. Individuals should have an opportunity to report their research impact in terms of open science, public engagement, translation and application, economic activity, or policy-making. In accordance with the University's commitment to the Open Research agenda⁴, evaluation processes should recognise contributions to open research e.g., making datasets and/or software freely available, in Cambridge and more widely. Evaluation will appropriately take account of the diversity of a researcher's outputs. Guidance for each particular assessment process should explicitly encourage the submission of materials across the relevant range of formats.

² <https://libguides.cam.ac.uk/research-skills/metrics>

³ <https://www.metrics-toolkit.org>

⁴ <https://osc.cam.ac.uk/open-research/open-research-position-statement>

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Qualitative measures of research excellence will be used, as appropriate, for example: (i) the use of narrative and/or summaries of key papers in CVs and other materials to explain the quality of selected outputs; (ii) the use of narratives to document research outputs in relation to open science, public engagement, translation and application, economic activity, and policy making criteria for impact.

Narrative-based CVs, such as the Royal Society's *Résumé for Researchers*⁵, aim to capture the full range of an individual's research contributions and are increasingly being adopted by funders. Narratives are already widely used in research assessment across the University, for example, in evaluating research summaries or plans, and in probation and promotion processes. Although narrative elements come with their own biases (for example, they could privilege candidates with particular literary skills), and an exclusively narrative CV is not deemed appropriate, narratives will be requested under suitable headings as a part of assessment processes, and applicants will be invited to include in their CVs an account of what they see as the importance of an appropriate subset of their outputs and to justify their citation of any citation-based author-level or paper-level metrics that they wish to include in their supporting documentation. Narrative sections are useful in capturing contributions to research culture, researcher development or open science, where examples include but are not limited to:

- *Contributions to research teams and the development of others:* e.g., project management, supervision, mentoring, involvement in collaborations/networks within and outwith the University, strategic leadership, etc. Narrative documentation of contributions of this nature could appropriately include statements from mentees, or members of research teams, who have been mentored or managed by the applicant.
- *Contributions to the wider research and innovation community:* e.g., reviewing, refereeing, editorial board or funding panel membership; committee membership in the Department, University or nationally/internationally; organisation of workshops, conferences or other events that benefit the research community; the development of research facilities or service platforms, contributions to improving research culture; contributions to open research.
- *Exploiting and communicating research:* e.g., knowledge exchange, generation of IP or new commercial activity; engagement with industry, private/public sector partnerships, or policy makers; communication with researchers in different fields/disciplines or general public engagement through books, broadcasts, talks or other general media.

⁵ <https://royalsociety.org/topics-policy/projects/research-culture/tools-for-support/resume-for-researchers/>

Annex 1: Specific Considerations for Key Research Assessment Exercises

Promotion Reviews of Internal Candidates

- Applicants for promotion (and probation) review must not include journal level metrics, such as the Journal Impact Factor, in any part of their supporting documentation.
- Applicants may include author level metrics, such as the h-index, in narrative sections as evidence to support the influence or progression of their research activity. Applicants should justify the choice of any author-level metrics they choose to include and should refrain from any explicit ranking or comparative evaluation of their metrics relative to other authors in Cambridge or elsewhere.
- Applicants may use citation-based paper level metrics, for example to highlight the influence of a particular research output. In such cases, internal applicants should use the Relative Citation Ratio (RCR) or the Field Citation Ratio (FCR) provided via the Dimensions link for each paper on the University's Symplectic system where it is available. Raw citation counts should be discouraged.
- Applicants are encouraged to include a wide range of potential research impacts beyond the narrow focus on peer-reviewed publications. Preprints with DOIs are acceptable as part of the list of publications submitted by applicants. Other acceptable research outputs may include, but are not limited to, datasets, databases and software, patents and other commercial activities, translation and application of research outputs, contributions to public engagement and policy impacts.
- Applicants are encouraged to describe how their research activity contributes to and is compliant with the University's open research policy⁶.

Probation Reviews

- Probation reviews will generally follow the guidance for promotion reviews. The probation period is particularly important in setting expectations about research culture and evaluation of research performance in the University. Supervisors of probationary staff should pay special attention to communicating the Schools' commitment to the DORA principles, including early, clear and consistent guidance on how a diverse range of outputs will be evaluated by the committee assessing each individual's performance at the end of their probation period.
- Performance criteria for successful completion of a probation period, as agreed in advance with recently appointed staff, should not include lists of target journals, or any other publication criteria explicitly or implicitly informed by journal-level metrics.

Recruitment Processes

- All advertisements and job descriptions etc should clearly state that the University supports the principles of DORA, e.g: "As a signatory of the San Francisco Declaration on Research Assessment, the University of Cambridge does not use journal level metrics when assessing the quality of research outputs. Applicants should not include journal level metrics, such as the Journal Impact Factor, anywhere in their application materials."
- If article- or paper-level metrics are to be used as part of the assessment process, it must be clearly stated in the guidance to applicants which metrics are admissible and

⁶ <https://www.openaccess.cam.ac.uk/university-policies-guidance>

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School of Biological Sciences and School of Clinical Medicine, University of Cambridge recommended. For examples, applicants wishing to use PLMs (Paper Level Metrics) to emphasise the influence of a particular research output should be encouraged to use Field Normalised or Weighted indices, preferably the Relative Citation Ratio, rather than raw citation counts, which should be discouraged.

- Author level metrics, such as the h-index, may be provided by applicants as part of a narrative; but applicants should justify the choice of any ALMs (Author Level Metrics) they choose to include without any explicit ranking or comparative evaluation of their metrics relative to other authors in Cambridge or elsewhere.
- Applicants should be encouraged to highlight a subset of specific research outputs and provide a brief narrative on their importance. For example, applicants should be asked to highlight a select subset of what they consider to be their most important research outputs and provide a brief narrative account of their significance.