









OPINION ARTICLE

# Publishing peer review materials [version 1; referees: 2 approved]

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## Abstract





Publishing peer review materials alongside research articles promises to make the peer review process more transparent as well as making it easier to recognise these contributions and give credit to peer reviewers. Traditionally, the peer review reports, editors letters and author responses are only shared between the small number of people in those roles prior to publication, but there is a growing interest in making some or all of these materials available. A small number of journals have been publishing peer review materials for some time, others have begun this practice more recently, and significantly more are now considering how they might begin. This article outlines the outcomes from a recent workshop among journals with experience in publishing peer review materials, in which the specific operation of these workflows, and the challenges, were discussed. Here, we provide a draft as to how to represent these materials in the JATS and Crossref data models to facilitate the coordination and discoverability of peer review materials, and seek feedback on these initial recommendations.

## Keywords

peer review, scholarly publishing, JATS, JATS4R, Crossref

## Open Peer Review

Referee Status:  

	Invited Referees	
	1	2
<b>version 1</b> published 17 Oct 2018	 report	 report
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Comments (1)



This article is included in the **Science Policy Research gateway**.

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**Competing interests:** Michael Evans is the Production Manager for F1000 Platforms, but was not involved in the production of this manuscript.

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## Introduction

Peer review is the practice of subjecting a scholarly article, such as a research paper submitted to a journal, to scrutiny or review by others ('peers') who are experts in the same field. Generally, if the author of the article addresses the concerns raised during peer review to the satisfaction of an editor, the article is accepted for publication. The peer review process produces a trail of documents, which can include: different versions of the article; the reviewer reports (with or without the name of the reviewer); responses by the author to the reports; and various letters (including cover letters from the author and decision letters from the editor). It is also possible for an article to go through two or more rounds of peer review, which increases the number of documents generated.

Traditionally the documents generated during the peer review process were only ever seen by the author, the editor and the reviewers, but a small number of publishers now publish some peer review materials alongside articles. Moreover, support for this practice has been slowly gaining momentum, driven by a wish to increase transparency and provide credit for peer reviewers (Polka *et al.*, 2018). There were 10 journals identified in the PMC corpus that archive some peer review materials. These journals take a variety of different approaches, which results in differing levels of discoverability for these materials. Additionally, some journals were identified as publishing peer review materials but not consistently archiving them in a repository.

Here we report the findings of a workshop, held at the BMA in London, UK on July 6, 2018, at which representatives from publishers, PubMed Central (PMC)/Europe PMC, and Crossref discussed the practical challenges involved in publishing peer review materials. We focus on what has to happen after a publisher decides to start publishing peer review materials, and discuss how to do this in a way that is sustainable, improves discoverability, and supports machine readability and archiving. We do not discuss the relative merits of the different approaches to peer review that have emerged over the past decade, notably the many different flavours of 'open peer review' (Ross-Hellauer, 2017), but we feel that many of our suggestions and recommendations are relevant to most if not all of these approaches.

## What are peer review materials?

As mentioned above, peer review materials can include: the reviewer reports (with or without the reviewer name); responses by the author to the reports; and various letters (including cover letters from the author and decision letters from the editor). Some articles go through two or more rounds of peer review, which increases the number of documents generated. While each document is usually accompanied by a date, other metadata concerning the correspondence can be highly variable. For example, peer review reports and editors decision letters may or may not include names of reviewers or editors, or their ORCID IDs; the individual materials may or may not have DOIs. In subscription journals it is also possible for peer review materials to appear in front of or behind the paywall.

Publishers are approaching the publication of peer review materials in a number of ways. The aims of this group were not to prescribe what should be done from an editorial point of view, but to enable what is published to be found by readers and machines alike. Prior to the workshop, data were collected from each publisher attending and we found the following materials are published:

- Peer review reports, anonymized or with report author names
- Author responses/Rebuttals
- Editor decision letters

Some journals also provide appeal and resubmission information (including previous versions of the article, dates, and actors involved).

In some cases publishers make peer review materials available as a single PDF with versioned reports linked to specific revisions of the article. Other publishers create separate artifacts, each with unique DOIs, and still others edit and amalgamate various reports into one narrative. The variety can be found in the meeting notes and a table filled out before the meeting (See [Supplementary File 1](#) and [Supplementary File 2](#)).

After collecting these data, representatives from each of the identified publishers were contacted to attend a workshop in London on July 6, 2018; all but one publisher was able to attend. Further publisher representatives were invited following communication with ASAPbio – these publishers are embarking on this practice. Crossref, Europe PMC and PMC were also represented at this meeting, as downstream recipients of this content or the metadata related to it. Journal representatives expanded on the data previously collected and shared details on how they collect and publish peer review materials, how these artifacts are represented in the ANSI/NISO Z39.96-2015 Journal Article Tag Suite (JATS) document standard (these principles can be applicable to other DTDs), and whether they send relevant metadata to Crossref. Crossref shared details of their schema extension to represent this form of content (<https://www.crossref.org/services/content-registration/peer-reviews/>). As downstream recipients of peer review materials, PMC and Europe PMC presented the perspective of archives that collaborate with journals to ensure that content is being captured in a sustainable and consistent format that fosters long-term preservation and access to the scholarly record. Understanding the goals of, workflows, and limitations on each stakeholder allowed the group to refine the scope of the discussion and its outcomes.

## Peer review materials need to “stand alone”

In order to advance the transparency and recognition of peer review materials, we agreed these peer review materials need to stand alone from the main article for the purposes of, for example, credit and citation. Ideally, each content item should have its own DOI (as per the recently enhanced Crossref schema). We identified three levels of achieving this, with level 1 being the basic and least preferred option, but probably currently the most achievable and pragmatic:

1. Peer review materials are attached to the article as a single or numerous PDFs. Whether these materials are pulled together into one document or attached as separate documents, there should be some defined mechanism in the JATS XML tagging that would support the capture of any available metadata and identify these files in a machine-readable and interoperable way for publishers to tag this content appropriately.
2. Peer review materials are appended to the article within the full text (so all is machine readable) as a sub-article component of the XML.
3. Peer review materials are full-text XML “articles” or “commentaries” in their own right that link bidirectionally to the main article.

### Required metadata versus rich metadata

Whether the material is provided as a PDF(s) attachment to the main article, or as a full-text XML sub-article or separate article, important metadata can be attached to the item in a machine-readable way, and DOIs can be applied. What types of peer review information are available is dependent on the publisher’s peer review policy, for instance whether reviewers and editors are named, whether the peer review material carries the same license as the main article or takes another form, and what items constitute the peer review materials. Additional metadata fields, such as dates of review and date of review publication and the inclusion of ORCID IDs for reviewers and editors will also be subject to publisher policies and workflows. However, all of this material can be added to the item in a machine-readable way. Even if the actual content is not published in full-text XML format, the metadata can (and should) be.

The topic of licensing of the peer review materials was briefly discussed at the workshop but ultimately left out of the remit of this group because the JATS tagging schema would allow for different licensing information to be added for these items or to retain that of the main article, as a publisher chooses.

### Challenges in the process

While a few of the publishers had processes in place to prepare the peer review content automatically or within a few minutes, others spend 20–40 minutes per article. In such cases, the tasks that are attributed to this time include the following:

- Removing boilerplate text from review reports
- “Stitching together” the material from disparate locations in the submission system
- Editorial checks:
  - Reviewing the content for sensitive information, e.g., unpublished data additions and confidentiality leaks, as well ensuring the tone of the report is appropriate
  - Removing author responses that contain data the author wants to publish in a subsequent paper
  - Arbitration processes for conflicting reviews

Where time is spent—whether in the editorial or production process—depends on the publisher workflow. Regardless of workflow, the overlap in tasks identified provides evidence of the potential value of updating the infrastructure of submission systems to account for and streamline these efforts. Coordination between publishers and submission systems could minimize the time spent “stitching together” peer review materials into a publishable format.

In addition to time and workflow hurdles, another major challenge noted by those publishers without their own hosting platforms, was the actual publication process and online hosting of peer review materials. Many publishers identified that some online hosts were not able to manage this new content type. As a result, peer review materials are being captured in supplementary material sections because alternative options are not available. In such cases, it becomes more difficult to capture any relevant associated metadata in a meaningful way for the peer review materials or to make this valuable content easily discoverable.

These challenges are common for publishers in that most of the established submission systems and hosting platforms were designed and built many years ago and may be slow to accommodate new requirements. Coordinated communication with these platforms regarding the workflows around publishing peer review materials may result in more satisfactory and generic approaches to accommodating publication of peer review materials.

There are internal challenges of cost control issues that also need to be accounted for, and the publication of a single PDF is often more achievable financially based on current systems than producing full-text XML. However, the attachment of machine-readable metadata to that PDF should be within reach, especially if the submission systems and hosting platforms can build these requirements into their products.

### Importance of version management

An additional challenge may be introduced in managing peer review materials in cases where such materials are collected for more than one published version of a paper. The [Recommendations of the NISO/ALPSP Journal Article Versions \(JAV\) Technical Working Group \(2008 April\)](#), included the following types of article instances:

- authors-original
- submitted-manuscript-under-review
- accepted-manuscript
- proof
- version-of-record
- corrected-version-of-record
- enhanced-version-of-record

To this list, the JATS4R working group on “Article publication and history dates” added pre-print. The JATS4R draft recommendation advises that if the publisher publishes a revision of any

of these stages, the subsequent revisions should be labelled with suffixes, as follows: “-r1”, “-r2”, etc. (<https://jats4r.org/article-publication-and-history-dates>).

If the peer review materials reference content in a specific version of an article, that link between peer review materials and correct version should be captured in the metadata for clarity. Managing the associations between peer review materials and article version is essential for journals that make multiple versions of a paper publicly available, to ensure the archival record is accurate and that the process transparent. For example, if a journal publishes three versions of an article, any related peer review materials should be associated with the appropriate version. It should not be left to a reader to determine if a peer review report or decision letter relates to the first version, the second version, or the third version.

### JATS XML proposal (designed to aid depositing to Crossref)

Irrespective of the editorial and publisher decisions regarding workflow, we propose the following options regarding JATS XML tagging, designed to also aid metadata registration with Crossref (note we are using the same terms as Crossref where controlled vocabulary is required).

#### Overarching document type

Review documents may be supplied as:

1. sub-articles <sub-article> to the article being reviewed (sub-articles may be full-text XML or XML metadata plus a link to the PDF)
2. independent articles <article> (with the appropriate <related-article> links – Peer Reviews MUST link to the version of the article they are reviewing and Author Replies; Decision Letters MUST link to the version of the article they are passing judgment on; and Author Replies MUST link to each Review/Decision Letter it is addressing)

#### Identifying the type of content

<sub-article> or <article> MUST have an article-type attribute with one of the values listed in [Table 1](#).

The term manuscript does not map to anything we’ve discussed.

#### Identifying the recommendation

This is an optional item. Currently there is no corresponding tag in JATS and so would require a request to the JATS Standing Committee.

There would be a fixed value list, mapped to the Crossref schema:

- major-revision
- minor-revision
- reject
- reject-with-resubmit
- accept
- accept-with-reservation

NOTE: There should be no “recommendation” for author-comment type content.

#### Identifying the authors (including ORCIDiDs)

It is an optional element and should be contained within <contrib>, which should contain a <name> or <anonymous/>.

If <contrib> is used, it MUST contain @contrib-type that maps to following controlled vocabulary:

- For Peer Reviews, use @contrib-type=“reviewer”
- For Decision Letters, use @contrib-type=“editor”
- For Author Reply, use @contrib-type=“author”

**Table 1. Article-type attributes.**

Attribute (as per Crossref schema)	Corresponding term in this document
referee-report	Peer review
editor-report	Decision Letter
author-comment	Author Response/Rebuttal
aggregated-review-documents	Collected Review Documents

**Note:** aggregated-review-documents is not currently in the Crossref schema; that schema uses the term aggregate. Crossref has two further attributes to describe the type of content: **community-comment** and **manuscript**. The XML sub-group discussed these terms and decided to exclude them as community-comment presumably refers to post-publication comments via systems like Hypothesis and so: a) are not guaranteed to be “peer” comments and are excluded from the criteria of this paper and b) it is unlikely that publishers in the near term would pull that content back into the source JATS XML, post publication. Crossref schema also allows for a stage, pre-publication or post-publication. This is therefore also felt outside of this remit.

We intend that the @contrib-type attribute value reflects the contributor's relationship to the peer review process and not the relationship with the document.

The <role> tag is optional and can be used for display terms of what publishers may use for their journal (for example variations on the term editor could be Academic Editor, Reviewing Editor, Senior Editor, E-i-C etc.).

Names, affiliations and contributor IDs (such as ORCID), where provided, follow standard JATS tagging (see JATS4R recommendation: <https://jats4r.org/authors-and-affiliations>).

### Identifying any competing interests

Follow tagging recommended by JATS4R: <https://jats4r.org/conflict-of-interest-statements>.

### Identifying DOIs

DOIs for peer review materials are optional but strongly encouraged. Use <article-id pub-id-type="doi">

### Licensing and copyright

Each review document (standalone article or sub-article) SHOULD have license information with a machine-readable license. Review documents supplied as <sub-article> may have their own <license> element or inherit their license information from the parent document as described in the JATS4R Permissions Recommendations (<https://jats4r.org/permissions>).

### Date

Each review document (standalone article or sub-article) MUST have a pub-date and may have other publication information captured as <event>. Review documents supplied as <sub-article> may have their own <pub-date> element or inherit their <pub-date> from the parent document.

### Not allowed

There are some elements that MUST NOT appear in review documents:

- a. <funding-group>
- b. <app>, <app-group>, <ack>, <glossary>, <back>/<sec>
- c. <supplementary-material>, <inline-supplementary-material>
- d. <bio>
- e. <article-version> Once published, review documents will not be "versioned". If the reviewer(s) write a review on an updated version of the manuscript, the peer review is a new published object.

### Crossref metadata

As of November 2017, Crossref supports the scholarly discussions entailed in the publication process as well as those after publication (e.g. "post-publication reviews"). In the same fashion as all content registered with Crossref, peer review metadata

is available via the open Crossref APIs and Crossref Metadata Search. For full details and example deposit XML, see the Crossref peer review deposit guide: <https://support.crossref.org/hc/en-us/articles/115005255706-Peer-Reviews>.

### Display of peer review materials

We also propose that publisher web platforms and archives display peer review materials (or links to peer review materials) in a clearly labeled peer review section. This practice will help ensure that not only are the journal processes transparent but that the content itself is easy to find and navigate to, regardless of how a journal chooses to make them available.

### Future/next steps

This proposal is intended to lay the groundwork for the publication and archiving of peer review materials across publishers and publication models, providing flexible options to meet different journal needs and workflows. Moving forward, there is a need for continued collaboration and discussion as peer review models and workflows evolve. As the goals of these peer review efforts are more clearly defined across the publishing and academic communities, certain models may lend themselves more readily to supporting those desired outcomes. Continued efforts to identify the most critical needs of each user group should be explored through ongoing efforts such as ASAPbio and FORCE11. In turn, these needs can inform the technical solutions and recommendations going forward.

Further technical discussions should not be placed on hold in the interim, though. As publishing peer review materials practices grow, there is a pressing need for industry-wide solutions now. We would like to see the XML recommendations from this group be converted to a JATS4R recommendation on the publishing of peer review materials. Similarly, it would be of value to the community for Crossref and JATS to coordinate efforts and ensure some level of metadata alignment for peer review materials that would reduce costs to publishers and minimize barriers to implementation.

This type of coordination between publishers, archives, and other organizations that support the scholarly communication enterprise is critical to ensuring that the needs of the whole community are being met. Past experience has taught us that making content available is just the first step toward increasing transparency. Doing so in a flexible, consistent, and meaningful way is imperative in making certain that the available material is also discoverable and that long-term preservation of the content can be supported. Implementing the next steps through community-driven recommendations in a sustainable way will be important in increasing transparency and rigor of the scientific record.

If you are publishing peer review materials, or are not yet and are considering doing so, please comment.

### Data availability

No data are associated with this article.

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### Grant information

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by 29 European-based funders of life science research: <https://europepmc.org/Funders/> under Wellcome Trust grants 098321 and 108758, awarded to EMBL-EBI.

*The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.*

### Supplementary material

**Supplementary File 1. Workshop agenda and notes from the meeting.**

[Click here to access the data](#)

**Supplementary File 2. Current processes of the different journals represented at the meeting.**

[Click here to access the data](#)

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[PubMed Abstract](#) | [Publisher Full Text](#)

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[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)

# Open Peer Review

Current Referee Status:  

Version 1

Referee Report 29 October 2018

<https://doi.org/10.5256/f1000research.17992.r39584>



**Tony Ross-Hellauer**  <sup>1,2</sup>

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“**Publishing peer review materials**” reports the outcomes of a 2018 workshop convened with stakeholders engaged in the publication and dissemination of peer review report, to work towards consensus on “how to represent these materials in the JATS and Crossref data models to facilitate the coordination and discoverability of peer review materials”.

The article is valuable for understanding the range of publisher workflows in operation for publishing peer review at present. As such, it both makes the case for the need for standardisation of description and proposes a draft JATS XML proposal designed to aid depositing to Crossref. The proposals are pragmatic and reasonable, reflecting the variety of workflows in operation at present and the possibilities for timely transition towards a more standardised system.

This first version clearly indicates that it is a “draft” to “seek feedback on these initial recommendations” – but despite its provisional nature, I believe it is ready to be indexed already in this version, as it is a sufficiently complete record of the discussion to this point.

The article makes very clear how much work lies ahead, and that this document is just a starting point. Given its purpose, I don’t believe formal peer review is actually necessary here – as a working proposal released to the community for feedback, the views of each member of the community are equally important. I hope my comments will be received as just one more voice in that conversation, and given equal weight with views shared by other channels.

I agree with Reviewer 1’s comments regarding useful ways to enhance the level of detail here. To this I would only add that it would be useful to describe why the JATS elements under the sub-heading “Not allowed” are so - why must they not appear in review documents?

Other than this, I would only note some further thoughts for how these discussions could develop in the future. None of these issues need necessarily be considered within this present article, but I record them here in hopes of continuing the conversation:

- **Links to review policies:** To understand the context of the review it would be helpful to have some lasting link to review policies under which the review was conducted. For example, what criteria were the reviewer asked to consider? Was it single/double-blind or open identities review?



If the latter, were reviewer identities revealed to the author (and if so at what stage)? This information could be made available via descriptive metadata fields in this schema, or via persistent links to policy descriptions.

- **From “is” to “ought”:** I understand it is not the scope of this document to prescribe practices, but to ensure pragmatic routes to interoperability of metadata description. Hence, I understand that the “topic of licensing of the peer review materials was discussed at the workshop but ultimately left out of the remit of this group because the JATS tagging schema would allow for different licensing information to be added for these items or to retain that of the main article, as a publisher chooses”. Nonetheless, I think as a community some best-practice guidelines would be helpful to ensure the interoperability and re-usability of this content. This point goes more generally for other best-practice issues (e.g., assignment of DOIs). In the “Future/next steps” section you note that discussions should continue via other fora – here, I wonder if there is a need for a formal working group hosted by, for example, Force11, to work towards consensus on such topics. (This could also potentially link up with the PEERE group’s work on peer review data-sharing).
- **Reviewer roles:** We may in future see more stratification of reviewer roles and it would be interesting to have recorded exactly what parts of a manuscript each reviewer had considered (methodology, stats, analysis, etc.). Also, if any computational tools had been applied to check, e.g., statistics. Here it would be useful to have a standard typology of such roles.
- **Other review materials:** There are a multitude of venues for “post-publication” review – including journal article comment sections, third-party platforms like publons or pub-peer, or even individual blogs, etc. It would be useful to have formal, persistent links between such materials and the article in question so that readers may more easily place the article in the context of a continuing discussion. I imagine Crossref event data will be useful for this, but I wonder if there would be value in third-party platforms also applying this schema (suitably extended/adapted) to represent these links in a more formal way?

**Is the topic of the opinion article discussed accurately in the context of the current literature?**

Yes

**Are all factual statements correct and adequately supported by citations?**

Yes

**Are arguments sufficiently supported by evidence from the published literature?**

Yes

**Are the conclusions drawn balanced and justified on the basis of the presented arguments?**

Yes

**Competing Interests:** I have been a vocal advocate of publishing review reports (as well as other elements of open peer review). I am Editor-in-Chief of the open access journal Publications, which implements a form of open peer review that includes publishing review reports.

**I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.**

Referee Report 22 October 2018

<https://doi.org/10.5256/f1000research.17992.r39586>

**Jessica K. Polka** 

ASAPbio, San Francisco, CA, USA

In "Publishing peer review materials," Beck and coauthors present the outcome of a workshop that assessed the current state and best practices for the technical representation of peer review material and metadata. The report is well-organized and proposes guidance on XML tagging that the group hopes will be adopted by JATS4R. This article is an important contribution to the conversation about increasing transparency in peer review and will facilitate its development as a valued, linked, and preserved class of scholarship.

I don't feel that any of the following comments need to be addressed before the manuscript is indexed in PubMed, but I do believe that the report could be strengthened by attention to these areas:

**Presentation**

- This piece would benefit from more illustration of workshop outputs. For example, is there a file you can point (or embed inline) that demonstrates best practices for tagging?
- In a similar vein, there is great information in Supplementary File 2. Can the process information be used to generate an in-text table?

**XML proposal**

*Note that I lack practical experience with JATS.*

- Could the tag also be used to identify student or postdoc co-reviewers?
- Is intended to represent the publication date of the review (presumably the same as the article) or the (in this case probably more useful to readers) date that the review was submitted? Or is that captured in ? Clarification would be helpful.
- Why is disallowed? I would like to imagine a future in which peer review is recognized as a valuable scholarly activity, something that funders would like to know they are supporting.

**Text edits**

- Please define "BMA."
- "Past experience has taught us that making content available is just the first step toward increasing transparency." What does this refer to?
- "The term manuscript does not map to anything we've discussed." What does this mean?

**Is the topic of the opinion article discussed accurately in the context of the current literature?**

Yes

**Are all factual statements correct and adequately supported by citations?**

Yes

**Are arguments sufficiently supported by evidence from the published literature?**

Yes

**Are the conclusions drawn balanced and justified on the basis of the presented arguments?**

Yes

**Competing Interests:** I am employed by a nonprofit (ASAPbio) promoting the publication of peer review reports.

I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

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## Discuss this Article

Version 1

Reader Comment 25 Oct 2018

**Ella Fleming**, BMC part of Springer Nature, UK

I would like to thank you all for this contribution to the literature. For the benefits of open or transparent peer review to become mainstream it is imperative to have an agreed infrastructure and way of archiving peer review content so it's discoverable, and can be cited or used by a researcher to support their development.

I have one comment that I was hoping you might be able to provide clarity on. I work on a portfolio of open peer review journals within BMC and feedback I often get from Editors is that when they provide authors with full feedback following their own assessment (in addition to peer review reports) it is often difficult to find it within a manuscript's prepublication history. This can sometimes be a full report, analogous to a reviewer's. This would differ from the decision letter, which would combine the reviewers' comments and editor's comments, along with the decision letter text.

My question is, would the tagging detailed above help capture an Editor's review/assessment as its own entity, so an Editor's report could be used/cited/archived in the same way as reviewers. For example, I believe it might work with the following: Crossref Attribute as 'referee-report' and the @contrib-type would be "editor".

My COI is detailed below and this comment is therefore meant as a reader comment.

**Competing Interests:** I am employed by Springer Nature and colleague to two of the authors of this paper (Louisa Flintoft and Magdalena Skipper). As part of my role I oversee a portfolio of open peer review journals.

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