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#### IN THIS ISSUE:

HOW JOURNALS/PUBLISHERS CAN HELP REFORM RESEARCH ASSESSMENT OPENING UP PEER REVIEW POLICIES 2019 CSE ANNUAL MEETING RECAP



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On the cover: Neuroscientists at the California Institute of Technology (Caltech) have looked inside brain cells as they undergo the intense bursts of neural activity known as "ripples" that are thought to underlie memory formation. Image courtesy of Thanos Siapas & Brad Hulse/Caltech via the National Science Foundation Multimedia Gallery (https://www.nsf.gov/news/mmg/mmg\_disp. jsp?med\_id=184380).

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## Memories Regained: On Opening up Peer Review

#### Jonathan Schultz

This issue of Science Editor features an overview<sup>1</sup> of recent developments in open peer review from the architects of the new TRANSPOSE database<sup>2</sup> designed to collect and present the various peer review processes at journals. This article has prompted me to consider the various arguments for and against publishing peer review reports, some of which I have collected below in the form of a decision letter and author response for a nonexistent manuscript.

#### Dear Author,

The editors thank you for submitting to our journal for consideration your manuscript asserting that the scientific publishing and research communities have reached a tipping point regarding the acceptance of open peer review, specifically publishing peer review reports at the time of publication. Your manuscript was reviewed by the editors and two reviewers, and your main arguments in favor of publishing peer review reports have been summarized as follows:

- 1. Published Reports help expose the inner workings of the black box that is peer review. Peer review remains a somewhat mysterious process, leading many to believe it is responsible for more, and less, than it is in reality. As you state, publishing peer review reports helps shed light on the actual process of peer review and what it can accomplish. As an editor, I particularly appreciated your point that publishing the decision letter along with the reviewer comments helps to clarify the role of an editor, emphasizing how they are not merely "scorekeepers" and are tasked with managing the tough calls, focusing reviewer concerns, making final decisions, and more.
- 2. They emphasize collaboration. As you note, when the journal publication and peer review process work well it's a collaboration between authors, editors, and reviewers. Once a journal has determined that the research is interesting, significant, and fits its scope, the reviewers and editors work to establish if the findings are valid, if the message is clear, and if there are any unnecessary gaps. As the editors will attest, this back and forth can be illuminating as all parties, who may not view a research topic in the same way, try to come to a common ground.
- **3.** They can serve as training materials. One of the first things that a reviewer training program does is provide

examples of good reviews and reveal the details of the review process. As the author states, published peer review reports serve the same purpose, which if adopted by most journals, will provide an exhaustive set of training materials for early career researchers in all fields. In addition, helping to expose the iterative nature of science, the misunderstandings that need to be addressed, and the tweaks that offer clarity, can provide a simple comfort to trainees as they see further examples of even the most accomplished scientists figuring things out as they go along.

4. They aid in replication. In perhaps the author's strongest argument, the case is made that the publication of reviewer reports provides another tool that can improve reproducibility. Especially for journals that include the authors' response, there are usually process details that might not make it to the published article but may prove essential to researchers later. In addition, as noted, if reviewers know that their reviews will be published and available for public scrutiny, they may be more likely to produce more comprehensive and helpful reviews, increasing the quality of the published research.

While it was felt that these are compelling arguments, the reviewers listed the following concerns that the editors believe need to be addressed before acceptance:

- 1. Publishing peer review reports makes the process appear "messy" and authors will be disinclined to publish in the journal.
- 2. They provide another possible "gotcha" for people to attack the authors and journal. For example, Reviewer #2 provided the following hypothetical disgruntled tweet: "For shame on the editors of X for publishing this article when reviewer #2 so clearly states why it's trash."
- 3. No one will read them.
- 4. They place additional strain on an already over-worked staff.

In addition, the editors ask that you please briefly clarify your concerns regarding signing reviews.

If you choose to revise, please provide a detailed Response to Reviewers. We thank you again for your submission and we look forward to receiving your revision. Sincerely,

Editor

#### Dear Editor,

Thank you for considering our manuscript and providing this valuable feedback. I appreciate you taking the time to summarize our arguments and giving us the opportunity to address the remaining concerns:

 Publishing peer review reports makes the process appear "messy" and authors will be disinclined to publish in the journal.

While I understand the concerns that publishing these process documents could be considered "messy," because they reveal at least the impression of the manuscript in its unfinished, draft state, I am not sure this is necessarily a negative. Messy can be good and science is usually messy, rarely moving in a straight line. Much of the research community has also already embraced this ethos, with an increasing number of researchers posting lab notebooks and protocols along with unreviewed manuscripts to preprint servers. Of course, while there is survey evidence that publishing peer review reports is broadly supported (see e.g., Ross-Hellauer et al<sup>3</sup>) input from authors, reviewers, and editors should be considered before making this change.

2. They provide another possible "gotcha" for people to attack the authors and journal.

This is true, and it is an unfortunate side effect that exposing more of the process gives people more to complain about. However, as stated in the manuscript, the increased transparency of this process and the possible increase in the quality of the reviews may lessen this tendency. In the end, it may simply be that "haters gonna hate" and I have expressed this point more professionally in the revised manuscript.

3. No one will read them.

While this is a valid concern, even if it is true, that isn't enough of a reason not to publish them in and of itself. For example, it is very unlikely that many people read conflict of interest disclosure statements either but it's important to include them, nonetheless. In addition, early data from the journals that publish peer reviews have shown a range of reader interest, from receiving 10% of the traffic<sup>4</sup> as full articles to as many as a third of all readers<sup>5</sup> clicking to view the peer review reports. In the revision, I've included a link to helpful FAQ from ASAPBio<sup>6</sup> with additional examples from journals with experience publishing peer reviews.

4. They place additional strain on an already over-worked staff.

This too is one of my chief remaining concerns, and it's why initiatives like the TRANSPOSE database<sup>2</sup> described in the recent *Science Editor* article<sup>7</sup> are so important.

Quite a few journals and organizations have already done much of the work to develop efficient processes and the TRANSPOSE database makes it easy for editors to see what other journals are doing and reach out to them as needed. I agree that the process should not be onerous to staff, and with the right guidance, it doesn't seem like it should have to be.

To address your final point, it does seem that signing reviews is a trickier proposition, and in my opinion, less clear cut. As shown in the survey linked above, this hesitation is common. On the one hand, it can help keep editors (and reviewers) honest. It's no secret that editors can send manuscripts to reviewers they know will go easy on it if they want to get this author or topic accepted, so exposing the names of reviewers would make those patterns blatantly obvious. On the other hand, we live in a world where people are petty, bias exists, and careers can be ruined by someone holding a grudge. A review is a criticism, a critique, and it's hard to ignore existing power dynamics when asking people to sign reviews as many accepted articles will receive negative reviews along their way to publication. That said, there are many positives to signing reviews, not least of which is that it provides public recognition for the essential work that peer reviewers provide, and my recommendation is that journals consider allowing reviewers to have the option of signing their reviews if desired.

I would like to thank the editors and reviewers again for their input. I hope that I have sufficiently addressed the remaining concerns, and the final manuscript makes a clear case that publishing peer review reports can be a valuable step toward further increasing the transparency and value of peer review.

Kind regards, Author

The cover of this issue shows a brain cell as a "ripple" occurs, which is believed to be part of the creation of a memory. The researchers who created this image, including Thanos Siapas and Brad Hulse of Caltech, are studying how information moves throughout the brain, for example, from "newly coded memories to other brain areas such as the neocortex for safekeeping and long-term storage."<sup>8</sup> Much like how a peer review report relates to an article, these ripples show not the actual memory, but reveal part of the process that forms the memory, providing insights into how the brain works and possible avenues for addressing alignments.

Elsewhere in this issue, Anna Hatch and Mark Patterson provide an excellent overview on "How journals and publishers can help to reform research assessment"; Resa Roth summarizes her research into "Understanding the

Importance of Copyediting in Peer-Reviewed Manuscripts"; Barbara Gastel and co-authors deliver their report on the 2019 AAAS Annual Meeting; Emilie Gunn puts out another Fire of the Week column, this time covering the important topic of "Protecting Patient Privacy Online"; and in her Gatherings of an Infovore column, Barbara Meyers-Ford attempts to answer the question, "PLAN S: Where Is It Now?"

Finally, this issue includes the first half of the annual meeting reports from the 2019 CSE Annual Meeting held in Columbus, Ohio, May 4-7, 2019, starting with a recap article by program co-chairs Mary K Billingsley and Shari Leventhal. As noted in the June 2019 Newsletter,<sup>9</sup> the meeting reports this year have been excellent and provide a great way to review the sessions and the valuable information and tips contained therein. We hope that these reports, and all of the articles in this issue, will provide insights into the process of editing science and further our mission of helping editors and staff run the best version of their journal or other publication in pursuit of improving the scientific literature.

#### Acknowledgment

Special thanks to Jessica Polka (ASAPBio) for feedback and suggestions.

#### Links

- https://www.csescienceeditor.org/article/opening-up-peer-review-policies/
- 2. https://transpose-publishing.github.io/#/
- https://journals.plos.org/plosone/article?id=10.1371/journal. pone.0189311
- 4. https://www.embopress.org/doi/10.1038/emboj.2010.307
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- 6. https://asapbio.org/pr-faq
- https://www.csescienceeditor.org/article/opening-up-peer-reviewpolicies/
- 8. https://www.caltech.edu/about/news/studying-memorysripples-49860
- 9. https://www.csescienceeditor.org/newsletter/june-2019-bringing-ithome/



Meeting poster, 1979. Source: National Institutes of Health (U.S.). Medical Arts and Photography Branch. Link: http://resource.nlm.nih.gov/101451108

## How Journals and Publishers Can Help to Reform Research Assessment

#### Anna Hatch and Mark Patterson

Journals and publishers recognize that editorial decisions can make or break researchers' careers. It is well established that administrators and decision-makers use journal prestige and impact factors as a shortcut to assess the research of job applicants, current academic staff, and even proactively recruit academics who score highly on such metrics. It is not uncommon to find language in university evaluation policies that reference or explicitly mention the Journal Impact Factor (JIF). For example, a recent study found that the JIF or other closely related terms, including "high-impact journal" and "journal impact," were mentioned in 23% of review, promotion, and tenure documents in a representative sample of academic institutions across the United States and Canada.<sup>1</sup> This amount increased to 40% among research-intensive universities. However, such an approach to research evaluation provides a limited view of anyone's accomplishments. Many groups also have argued that focusing on journal brands intensifies competition between researchers and journals in ways that distort behavior and undermine a healthy and productive scholarly enterprise.<sup>2,3</sup>

But it is not enough to recognize the problem. Identifying specific approaches that publishers can take to address these concerns really is key. The Declaration on Research Assessment (DORA)<sup>4</sup> is doing that by advancing practical and robust approaches to improve how research is evaluated in hiring, promotion, and funding decisions. But change—which is essentially cultural—does not come easy. It hinges on the actions of individuals, organizations, and every stakeholder in the environment. When DORA was released in 2013, the declaration provided 18 targeted recommendations to publishers, research institutes, funders, metrics providers, and researchers. Five of the recommendations were written for publishers, and the purpose of this article is to highlight some practical steps that publishers can take in support of more effective research assessment.

ANNA HATCH is the DORA Community Manager. MARK PATTERSON is the Executive Director of eLife and serves on the Steering Group of DORA and the Board of Directors of Crossref.

#### **From Journal Metrics to Article Merits**

A central idea in DORA is to shift emphasis from journalbased assessment to a much broader view of scholarly contributions that takes into account individual articles and other research outputs as well as contributions in teaching, mentorship, and public engagement. As a first step, and to signal a lack of the support for the journal impact factor, some publishers have abandoned promotion of the journal impact factor altogether, as has been done by the American Society for Microbiology, eLife, and PLOS.<sup>6-7</sup> Other publishers, such as EMBO, Nature Research, and the Royal Society,<sup>8-10</sup> have instead put the journal impact factor in the context of a broad range of journal metrics, which helps to show that different journal metrics have different values. These and other publishers have also added a graph to show the breadth of the citation distribution which is common to all journals and demonstrates that an impact factor is a poor predictor of the likely number of citations that any paper will receive.<sup>11</sup>

To support the shift towards the evaluation of individual articles (and other outputs), services have been developed that provide article-level metrics and indicators. Altmetric and ImpactStory<sup>12,13</sup> gather metrics from a variety of sources including Twitter, Facebook, Wikipedia, news outlets, and blogs to provide a sense of the attention received by an individual article, beyond citations. Importantly, these and other tools allow qualitative information to be gathered as well as quantitative information, such as who is commenting about an article and what types of opinions are being expressed. Publishers can support these approaches by providing article-level data themselves, including information about usage and citations.

Another initiative that can be supported by publishers is CRediT,<sup>14</sup> which provides a standardized taxonomy of author contributions. Many major publishers have adopted this taxonomy, which helps to identify the specific contributions that any author has made to a study. With greater adoption by journals, authors can compile their contributions across studies. Coupled with the use of article-level metrics and indicators, it is therefore possible for a researcher to build a data-driven picture of the influence of their work, which extends beyond traditional "authorship." However, as with the use of any metrics, care must be taken in the presentation and interpretation of such data.<sup>15</sup> The Metrics Toolkit<sup>16</sup> can help individuals better understand what information different metrics can and cannot provide.

#### **Beyond Articles**

Increasingly, publishers are supporting the recognition of research outputs beyond peer-reviewed articles. One important step being taken is to encourage best practices in the citation of outputs such as data, code, protocols, and other resources. Initiatives such as the Joint Declaration on Data Citation Principles has an associated set of recommendations<sup>17</sup> that all journals can follow. A related initiative has been created to generate unique identifiers for research resources (RRID).<sup>18</sup> By encouraging the use of such identifiers and practices, metrics can be gathered about the usage and value of all research outputs, which can feed into a more holistic approach to the assessment of an individual, group, or university's research.

On the other side of the coin, citing research outputs is not useful unless they are available to others. Journals should therefore require authors to make all of the core data and resources that underpin a piece of published work to be made available as openly as possible, according to the FAIR (findability, accessibility, interoperability, and reuse) principles,<sup>19</sup> to allow other interested researchers to build on the work. The authors will benefit from this approach because their resources and findings are more likely to be used and cited by others: information that could bolster applications for jobs and funding.<sup>20</sup>

Finally, another under-recognized aspect of scholarly activity is peer review. The insight and advice that researchers routinely provide to their colleagues receives little if any recognition. Therefore, another valuable step that publishers can take is to ensure reviewers get credit for reviews and, if reviewer and author agree, publish the peer review reports (with or without the name of the reviewer). There is a growing list of journals that are either already publishing reports or are committed to doing so.<sup>21</sup> To take this a stage further publishers can integrate with services such as ORCID or Publons<sup>22,23</sup> to add peer review activity to a researcher's profile and help them to gain recognition for this scholarly contribution. Researchers can use this information as evidence to demonstrate their service during evaluations.

#### Mighty Metadata

Richer and more effective research assessment will be supported by a robust network of connections between people and all of their research outputs and contributions. A crucial component of such a network is high-quality and open metadata. Publishers are the providers of a huge amount of metadata, made available through a number of services, especially Crossref. Several initiatives have been introduced in recent years to increase the value of publishing metadata and to strengthen the network of scholarship, most notably the Metadata 2020 project.<sup>24</sup> Publishers have been at the forefront of many of these developments and are continuing to play an important role in their adoption. Nevertheless, there is still a lot of variability in the quality of metadata, and improvements can be made.

Many publishers now require authors to provide ORCIDs for one or more authors, which will help with the creation of more complete and useful ORCID profiles.<sup>25</sup> Another important development is the Initiative for Open Citations,<sup>26</sup> which was launched in 2017 to encourage publishers to make their reference list metadata open. Most publishers deposit this metadata with Crossref but access is restricted by default. To make the data open publishers need to send an email to Crossref. Since I4OC was launched, more than half of the data is now openly available. However, many publishers are still unnecessarily restricting access, which is limiting its value for new uses and services.<sup>27</sup> Reference data can be used for many purposes, but given its relevance to research evaluation, fully open data will also help to support further experimentation and greater transparency in evaluation practices.

#### Advocacy

Whatever actions are taken by publishers and journals to encourage the reform of research evaluation, it is also valuable to provide context for these initiatives. Editorials, blog posts, and other articles can all be used to explain the position that a particular journal is taking. Publishers can also help to advocate for reform among the other stakeholders, especially researchers, funders, and institutions.

Scholarly meetings, especially for societies, are another place to bring people together for conversations about innovation in research assessment. Journals associated with societies are in a great position to do this. DORA itself originated from a group of journal editors and publishers who met at the American Society for Cell Biology (ASCB) meeting in San Francisco in 2012. More recently, DORA hosted a capacity building session at the 2018 ASCB|EMBO Meeting, where participants provided feedback on application materials for grant funding and faculty positions. During the exercise, participants identified shortcuts that assessors could take when reviewing applications. To help uncouple individual articles from a publisher's brand, one idea was to remove journal names from bibliographies and ask applicants to provide a 2-4 sentence summary describing the significance of the work.<sup>28</sup>

#### Looking Inward

In addition to taking action to encourage more effective and fairer research assessment by other organizations, publishers should also examine their own processes. Participation in the scientific publishing process as editors, reviewers, and authors contributes to researchers' professional success. Journals therefore have an obligation to promote equity, diversity, and inclusion at each step of the process. Some

gender imbalances are easy to recognize, like the relative number of female editors and peer reviewers.<sup>29</sup> Others, however, are less apparent. For example, one study revealed the gender inequalities among co-first authors on research articles suggesting that female authors do not always receive the credit they deserve.<sup>30</sup> One way that journals can decrease such disparities is by ensuring that editorial boards and peer reviewers reflect the diversity of the scientific community, which might also help to reduce bias in the editorial process.<sup>31</sup>

#### Why Take Action?

The fundamental purpose of journals and publishers is to support the communication and conduct of scholarship. As things stand, there is concern that the ways that journals are used for research evaluation is harming scholarship by introducing perverse incentives.<sup>32</sup> To counteract these effects will require coordinated action by all of the key stakeholders involved in scholarly communication, and journals and their publishers must play their part. In this perspective, we have described some of the actions that are achievable by most journals and they are summarized in a call to action (Box 1). Journals that adopt these and other approaches will be at the forefront of much-needed reform and will be serving scholarship more effectively.

#### Acknowledgements

We kindly thank Dominique Babini and Ginny Barbour for reviewing the article and providing helpful feedback.

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#### Box 1. Call to Action

- 1) Cease the promotion of journal impact factors<sup>5</sup>
- 2) Provide article metrics and indicators<sup>33</sup>
- Adopt the CRediT taxonomy for author contributions<sup>33</sup>
- Ensure that all reference data deposited with Crossref is open<sup>26</sup>
- Require authors to make all key data available according to FAIR principles<sup>19</sup>
- 6) Follow the data citation principles<sup>17</sup>
- 7) Encourage the use of unique identifiers (eg, RRIDs<sup>18</sup>)
- 8) Require authors to use ORCIDs<sup>25</sup>
- 9) Publish peer review reports and author responses along with the article<sup>21</sup>
- Examine ways to increase diversity, equity, and inclusion in the publishing process<sup>31</sup>
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### Opening Up Peer-Review Policies

### Jessica Polka, Tony Ross-Hellauer, and Gary McDowell

Authors in many disciplines favor<sup>1</sup> peer review moving out of the shadows and becoming a more transparent practice. Accordingly, platforms and publishers are increasingly implementing open peer review (OPR) to enable new kinds of discourse within the publishing process. Yet, these systems differ in what is revealed when and to whom.

OPR can operate on many different parts of the review process. It can influence the process of peer review (who can comment on the manuscript, and whether they can communicate with one another) as well as the transparency of information about peer review (the visibility of the manuscript or reviewer names, reports), and it can operate at many different times, from before submission (i.e., preprints) to after publication (i.e., post-publication commenting). One of us undertook a systematic analysis<sup>2</sup> of definitions of OPR; this uncovered 7 core traits, which were used in 22 distinct configurations. The most frequently used elements of OPR were revealing reviewer identities (open identities) and publishing reviews (open reports).

#### Growth in open peer-review implementations and experiments

While open peer review has been practiced by publishers such as BMJ, Copernicus, and BMC for almost 20 years, it has gained ground in recent years,<sup>3</sup> with EMBO Press, F1000, Nature Communications, eLife, PeerJ, and Royal Society Open Science serving as prominent examples.

The last year has seen a burst in activity in open peer review, some of which has manifested in new workflows and platforms. For example, Wiley launched a trial of a product called Transparent Peer Review4; it allows authors of papers in *Clinical Genetics* to opt in to have reviews posted on Publons. Encouragingly, 83% of authors opted in, and 10 more journals have recently joined the trial.

In addition, BMC has collaborated with Research Square to launch In Review,<sup>5</sup> a platform that makes manuscripts available for public comment while they are under review, representing experimentation in open participation.

JESSICA POLKA is Executive Director, ASAPbio; TONY ROSS-HELLAUER is Senior Researcher, Know-Center; and GARY MCDOWELL is Executive Director, Future of Research.



Photo by Javier Allegue Barros (https://unsplash.com/photos/ C7B-ExXpOIE?utm\_source=unsplash&utm\_medium=referral&utm\_ content=creditCopyText) on Unsplash.

Scholarly activity in open peer review has also made significant progress. In January 2019, results were released from a trial in which 5 Elsevier journals<sup>6</sup> began publishing all peer reviews. It showed that each journals' submission rates increased during the trial. While the rate at which reviewers accepted invitations to review declined, these declines matched global trends, so may not have been caused by the review model. Importantly, reviews submitted during the trial were as critical and constructive as those submitted before it. However, less than 10% of reviewers chose to sign their reviews, signalling hesitance to embrace open identities (as predicted by the survey mentioned above) even among reviewers confident in making their reports public.

# Importantly, reviews submitted during the trial were as critical and constructive as those submitted before it.

In addition, the authors of this article organized and/or attended a meeting at the Howard Hughes Medical Institute on transparency, recognition, and innovation in peer review<sup>7</sup> that resulted in the publication of an open letter<sup>8</sup> signed by over 300 journals that commit to enabling the publication of peer-review reports.

#### **Fine-grain variation**

Enthusiasm for open peer review is accompanied by tremendous variation in its implementation. Even within a

single broad category of open peer review—for example open reports—many different implementations are possible:

- Who makes the choice to publish peer reviews? Many journals give authors the choice, while others see adherence to a standard practice as a key element of their editorial process.
- When is this choice made? For example, do authors make the decision upon submission, or after seeing the reviews?
- What exactly is published? Is it the full text of every peer-review report, with nothing left as confidential comments to the editor? Or are the reports compiled into a summary document? For example, eLife publishes a decision letter containing major concerns raised by reviewers.
- How is it published? Does the peer-review report exist as a stand-alone object with its own DOI?

Best practices here are still evolving and will likely often be community-specific, particularly regarding choices about what to make open and when. However, in areas like the publishing of review reports, consensus on best practice and standardized workflows is emerging, as recommended in a recent workshop.<sup>9</sup> ASAPbio is hoping to explore best practices in greater detail in an upcoming meeting.

All of this diversity applies only to policies pertaining to open peer review; these questions do not address the many other variables introduced by opening commenting, reviewer interaction, or other novel peer-review workflows.

#### Ideally, it would be easy for authors, journal editors, and other policy makers to survey the landscape both inside and outside their field in order to inform their own peerreview practices.

While this variability in peer-review implementations and experiments is exciting, it can also be confusing for authors. Recently published guidelines,<sup>10</sup> created in collaboration with experts, seek to help guide publishers and editors in implementing such processes for the various facets of OPR. One urgent issue identified was the need to communicate OPR policies in a clear and transparent manner.

Experimentation is no doubt needed to arrive at optimal solutions for individual research communities. Ideally, it would be easy for authors, journal editors, and other policy makers to survey the landscape both inside and outside of their field in order to inform their own peer-review practices.

#### Transparency in peer-review policies

To assist authors and editors in surveying the landscape of peer-review policies, we created the TRANSPOSE<sup>11</sup>

database. TRANSPOSE is a grassroots initiative to crowdsource particular journal policies that would benefit from greater clarity and transparency, including policies surrounding open peer review. The goal of the database is to foster new practices while making authors aware of current policies, and we seek to provide resources to assist journals in setting, clarifying, and sharing policies.

Data can be entered into TRANSPOSE through a publicly accessible form, or by requesting from TRANSPOSE organizers a spreadsheet to enter multiple journals with varying policies. All contributions to TRANSPOSE are released under CC0,<sup>12</sup> and by default the most recent version of record will be displayed. All versions are retained and are available for download.

However, we also encourage contributions from journals and publishers in an editor validation process, resulting in records marked as "journal verified." These records are displayed as such online and can no longer be edited through the publicly-accessible form. Contributors can assert during the submission process that they are an authorized representative of the journal, such as an editor or publisher, and we will contact a representative of the journal before making verified records public.

### The benefits of transparent editorial policies

Why would authors and editors use TRANSPOSE? Authors will be able to compare journals to find which policies around open peer review suit their needs and desires in publishing their work. Editors will be able to learn about and compare current practices by searching for journals in related fields.

To make this effort as useful as possible, we plan to study current policies by conducting a landscape study of practices across scholarly fields. We will also work with the community to develop template model policies for use by editors as they update or modify practices according to their needs.

### Join us in making policies more transparent

As TRANSPOSE grows, we are eager to receive contributions of information about journal policies directly from the most reliable source: journal editors like you. These contributions signal a willingness to help a community project make the submission and peer-review process more clear and understandable to both authors and readers.

Please feel free to use the online form<sup>13</sup> to submit, update, or verify a single policy (whether it applies to one or many journals), or get in touch with us (via jessica.polka@ asapbio.org) if you have a more complex set of policies that spans across your journal family.

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#### **Resource Nook**

Via the Open Access Scholarly Publishers Association, Fiona Murphy and Bob Samors provide a helpful how-to guide for publishers on "Implementing a data policy" along with the following recommendations:

- 1. Encourage the use of persistent identifiers or PIDs (for example, DOIs for datasets, ORCIDs for authors, RRIDs for reagents)
- 2. Engage with journal editors, learned societies and other domain leaders to benchmark where a specific subject or community is comfortable in terms of encouraging, expecting or mandating open data practices. You could use the RDA policy framework as the outline for the conversation.
- 3. It is preferable to upload data to a repository, and include a link within a research article, rather than hosting via a supplementary material facility.
- 4. Sometimes data do need to be kept closed, but this doesn't need to be the default situation. Ask the researcher/author why should it be closed rather than why should it be open.
- 5. Have some information (metadata) in front of any paywall to point to where underlying data can be found

#### The full post is available online at

https://oaspa.org/implementing-a-data-policy-a-how-to-guide-for-publishers/

# Science—and Its Communication— Transcending Boundaries: Some Highlights of the 2019 AAAS Annual Meeting

#### Christina B Sumners, Jessica Scarfuto, Courtney Adams, Corley-Ann Parker, and Barbara Gastel

The 2019 annual meeting of the American Association for the Advancement of Science (AAAS), held February 14–17 in Washington, DC, bore the title "Science Transcending Boundaries." Thus, at this wide-ranging scientific meeting, some sessions on communicating science addressed the spanning of boundaries, including those between sectors, media, genders, or publication models. The following summaries focus on some sessions that science editors and those in related fields may find of particular interest.

#### **Communicating Science Seminar**

#### **By Christina B Sumners**

A daylong seminar on communicating science preceded the formal opening of the 2019 AAAS annual meeting. The following are some highlights. The seminar also included a session titled "Strategies for Sustaining Public Engagement in a Research Career," a networking fair, and a variety of additional breakout sessions.

#### "Connecting Science and Policy: Opportunities for Dialogue with Policymakers"

In this session, three speakers presented their experience in and advice for communicating science to policymakers.

Elizabeth Suhay, of the American University School of Public Affairs, pointed out that evidence isn't the only thing that influences policy. Understanding more about

CHRISTINA B SUMNERS is communications coordinator at the Texas A&M University Health Science Center; JESSICA SCARFUTO is an assistant lecturer at Texas A&M University; and COURTNEY ADAMS and CORLEY-ANN PARKER are graduate students studying science writing and science editing at Texas A&M University, where BARBARA GASTEL teaches these subjects.



Figure 1. Photo credit: Chantal Cough-Schulze.

other factors and about how the government works more generally can aid in planning an effective communication approach. One way to connect with policymakers, she said, is to take advantage of whatever connections—geographic, organizational, personal, topical—might already exist. For example, approaching a legislator as a constituent might be a way to use a common geography to begin the conversation. For more, Suhay recommended a website she created based on her research, https://www.american.edu/spa/scicomm/.

Sarah Brady, of the California Council on Science and Technology (CCST), shared the work of her organization, which provides reports and expert briefings to members of the California legislature and their staff. She said it is important to know whether one is providing scientific advice or advocating for a specific position or vote. CCST's nonprofit status means that it must engage only in the former, but that means its information tends to be trusted, she said. "Our independence, our non-partisanship is our bread and butter," Brady added. She also said people shouldn't be discouraged if granted a meeting only with a staff member, as that person is in a position to take the results of the meeting to the legislator.

Jesús Alvelo-Maurosa, a 2017–2018 AAAS Science and Technology Policy Fellow in the National Science Foundation



Figure 2. Speakers in the "Policymakers and Communicating Science" session. Photo credit: Jessica Scarfuto.

Directorate of Engineering, Division of Engineering and Educational Centers, suggested avoiding two big mistakes people make when communicating science to policymakers. First, he said, don't see the interaction with an elected official as a transaction. Instead, consider it a dialogue. Second, continue the conversation past the one meeting or phone call. The key is to "keep building that relationship," he said.

### Breakout Session: "Simplified Doesn't Have to Mean 'Dumbed-Down'"

Miriam Krause, Director of Education and Outreach at the multi-institutional Center for Sustainable Nanotechnology, led an interactive session in which participants critiqued examples of science communication, some done well others not so. The popular news articles that communicated science well generally had a few things in common. First, they made the research relatable, often through analogies. Second, they were accurate, yet interesting and appropriate to the audience. Third, in many cases, they made good use of visuals. Finally, the best articles had characters—though not necessarily human ones—and drama.

Krause said that every time someone communicates science to the general public, there is a risk-benefit calculation to be considered. After all, there is always a chance that the information will be misused or presented in such a way as to undermine credibility of the individual scientists, their institutions, and even science as a whole. Therefore, scientists and science communicators must always weigh whether it is better to get the word out, even if a few people misunderstand, or better not to share the information at all. If one does decide to move forward, Krause suggested a few ways the basic structure of a scientific paper should be flipped in order to communicate the information to nonspecialists. For example, the "hook," or the most interesting (to a lay audience) part of the paper, might be buried in the discussion section, and so a popular news article would move that information to the first sentence. It is also important to know what can be left out: For example, a scientific paper needs a detailed methods section so another scientist can replicate the research. However, a news article about the research doesn't require that level of detail, if it includes any information about the methods at all.

#### Policymakers and Communicating Science: Opportunities and Best Practices

#### **By Jessica Scarfuto**

When communicating science with policymakers, scientists should think like politicians in order to get evidence-based policy on the books. That was the main advice at the session "Policymakers and Communicating Science: Opportunities and Best Practices."

Elizabeth Suhay, of American University, Washington, DC, began the session with six recommended practices for communicating science with policymakers. The recommendations stemmed from a comprehensive research project by Suhay and three collaborators. "Scientists are excellent researchers but dive into the communication process without doing comparable research," Suhay said. To help navigate the political world and help promote evidence-based policy, Suhay gave the following recommendations:

- Know more than just the name and job responsibilities of your contact. Research your target audience beforehand, including his or her knowledge level of your subject, political party, and district or demographic represented.
- 2. Make sure your goals are very clear, but also consider the goals of the policymaker. As you craft your communication strategy, keep in mind that policymakers ultimately want to serve their constituents.
- 3. Be ethical, clear, relevant, and credible. Give the policymaker a complete picture of the research, not just your opinion. This will build trust and help the policymaker make the right choice for his or her constituents.
- 4. Be social. The world of politics is all about relationships and reputations, and it tends to be more social than most scientists' workplaces.
- 5. Embrace political diversity, and recognize that many factors in addition to scientific conclusions shape policy outcomes.

6. Learn about the policy-making process, particularly the lifecycle of legislation that you want to affect.

Karen Akerlof, visiting scholar at AAAS and affiliate faculty at George Mason University, built on Suhay's talk by discussing the communication problem from the policymaker's perspective. "Congress actually does use science all the time," she said, but it is typically in support of positions decided on while running for election. She pointed out that voters "might not be as willing to go for somebody who says 'well, I'll make a decision when I get to Congress.'" Understanding the barriers to communicating science, she stated, might help address the breakdown in understanding that both parties experience. Akerlof said that appreciating the complexity of science, learning about the intricacies of Congress, and understanding the role of bias among both scientists and politicians might lead to a more understanding and productive relationship.

#### Understanding the role of bias among both scientists and politicians might lead to a more understanding and productive relationship.

To close the session, Chris Tyler, of University College London, spoke on how evidence is used in the UK Parliament. After a brief overview of the UK Parliament for Americans, he discussed how issues of timing and scientific complexity relate to British politics much as they do to American politics. His conclusion: Both politicians and scientists need to be better at setting aside their differences and working together: "There needs to be a much greater effort to codesign research programs with policymakers."

### YouTube: Friend or Foe in Communication about Science and Health

#### **By Courtney Adams**

At this session, the speakers discussed YouTube's role in science communication. They described how the Google-owned video sharing platform can be used not only to expand science literacy but also to spread false information.

YouTube has more than 1.5 billion monthly users, which is almost one-third of all internet users, said speaker Shiyu Yang of the University of Wisconsin-Madison. Thus, science communicators have a "very great potential of using YouTube to reach a wide extensive audience," she said.

Yang provided several tips for using YouTube as a science communication tool:

• Produce relatively short videos to receive more views.

- Create short and informative video titles to attract viewers.
- Ensure that the video is viewable from a mobile phone, not just a computer or tablet screen.
- Use newsletters and emails to encourage your existing community to subscribe to your videos.

Although the ability to reach many people can be a positive for the science community, the other two speakers discussed the potential harm of YouTube as a propagator of false information.

"YouTube is a medium, not a source," said Asheley Landrum, of Texas Tech University. She stated, "YouTube allows for us to find information that we can arm ourselves with." However, she noted that anybody can post on YouTube if they follow the site's guidelines, which do not include ensuring that the content of the video is accurate. Landrum discussed the role of YouTube in the spread of the flat-earth conspiracy. Her research team asked 30 flatearthers about the origin of their beliefs, and 29 said they decided the earth was flat after watching YouTube videos about the matter. In a larger-scale study, involving 402 YouTube users, the team found that people with lower science literacy were more vulnerable to being swayed by a conspiracy video.

Dan Romer, of the University of Pennsylvania, discussed the viral spread of pro-tobacco-related content on YouTube. E-cigarette use in young people has increased dramatically over the last 7 years, Romer said. Romer and his colleagues had 1000 random people aged 18–24 watch either a videomontage of people using tobacco or a video unrelated to tobacco use. They found that members of the former group tended to believe that more people regularly use tobacco. Romer said that when people watch individuals like them engage in certain activities, they are more likely to consider these activities normal and safe. Romer called for increasing corrective content on YouTube in order to fight misinformation.

In response to a question from the audience, all three speakers agreed that it is important to continue using YouTube to inform people about science, so this medium is not flooded with only false information.

#### A Feminist Agenda for Science Communication: Necessary and Timely

#### By Corley-Ann Parker

Speakers at this session addressed the lack of feminist agendas in science and science communication. The main question the panelists addressed was, "If the field of science communication is increasingly female-dominant, why are women in science and science communication still so marginalized?"

#### If the field of science communication is increasingly female-dominant, why are women in science and science communication still so marginalized?

Tania Perez-Bustos, of Universidad Nacional de Colombia, Medellin, Colombia, said a feminist agenda in science communication means more representation of feminine values present in science. "The fact that there are more women in science communication implies that science communication carries certain feminine values—values that are culturally defined," she said, calling for more coverage of accomplishments by women and minorities in the sciences that display these values.

Stephanie Steinhardt, of Michigan State University, also emphasized expanding representation but mentioned that diversity goes beyond the obvious differences in race and gender, saying that "no matter how empathetic you are, you are still blind to those unlike you." Steinhardt suggested a feminist agenda that openly celebrates these differences, and she said that science journalists should include more stories that highlight diversity and "embrace the singularity."

Megan Halpern, of Michigan State University, discussed perceptions of women in the sciences and associated communications, and said that despite efforts in the media, women are still marginalized. "We have really beautiful visions for what science and technology can do, but women and minorities often find themselves where they can't use them," she said. Halpern said that creating a solid feminist agenda for science communication means actively offering stories, coverage, and other opportunities to more women and minorities.

Overall, the panelists emphasized that science communicators must challenge current perceptions of science-related fields and increase visibility of women involved in these fields.

#### Open Access Publishing: Considerations and Opportunities for Researchers

#### By Barbara Gastel

Recent initiatives to mandate publication in open access journals or otherwise increase availability of scientific literature have important implications for researchers, publishers, and others. At this session, speakers and audience members discussed such initiatives from a variety of perspectives.

Moderator Jeremy Berg, editor-in-chief of *Science* and its family of journals, stated that there are many ways to make research widely available while attending to quality. He then recounted some history. Among items mentioned were the launching in 1991 of the preprint server now called arXiv, the advent of open access journals in the 1990s, the emergence in 2008 of the public access policy of the National Institutes of Health for papers reporting research it funded, and the development of additional preprint servers in the last several years.

David Sweeney, of United Kingdom Research and Innovation, spoke in his capacity as co-chair of the implementation task force for Plan S. This plan, from Science Europe, will require researchers funded by participating institutions to publish in fully open access journals or to use compliant repositories. "Why have we failed to deliver?" Sweeney asked, calling for complete access to all research upon publication. He advocated the ideal of achieving this goal while also sustaining the current publication system.

Rajini Rao, of the Johns Hopkins School of Medicine, spoke as a practicing scientist. She noted a trend toward open access in recent years, and she endorsed posting preprints. She expressed concern, however, about possible unintended consequences of changes in publishing. For example, she noted that decreases in professional societies' income from their journals can reduce funding available for the societies' other activities. She emphasized that during the time of transition to new publishing norms, care should be taken to avoid letting trainees' career advancement suffer because of shifting expectations.

During the discussion period, voices from various stakeholders—including commercial journal publishing, open access journal publishing, and the library community joined those of the speakers. Rao said she liked having peer reviewers confer among themselves to provide a cohesive set of recommendations. An audience member noted that authors whose research is not well funded can have difficulty paying publication charges. In a closing interchange, participants indicated that journals should be transparent about uses of funds received.

The 2020 AAAS annual meeting, themed "Envisioning Tomorrow's Earth," will be held February 13–16, 2020, in Seattle, WA. For more information, please see https://www.aaas.org/.

# Understanding the Importance of Copyediting in Peer-Reviewed Manuscripts

#### **Resa Roth**

Copyediting is a fundamental part of the publication process. It can be performed before a manuscript is submitted for peer review or afterwards. The relationship between copyediting and the submission outcome (i.e., acceptance to a journal or conference) is not well understood. To discern the value of copyediting in relation to the review process, I examined peer reviews of manuscripts submitted to a large scholarly conference and surveyed the frequency of terms or phrases in reviewer comments that were associated with copyediting (e.g., "poorly written," "wordy," "typo"). I also sought to determine whether the frequency of positive, neutral/unknown, or negative copyediting terminology was correlated with submission outcome (reject and different types of accept).

#### Background

Not all researchers are gifted in writing as well as their fields of expertise. Thus, copy editors are sometimes hired to refine a manuscript prior to its submission for peer review. Alternately, some researchers will copyedit their papers themselves. Various scholarly journals also employ copy editors to review and edit articles prior to publication; in this case, copyediting takes place after peer review has been completed and an acceptance decision has been rendered. What is the purpose of the copyediting process? The Society for Editors and Proofreaders states "the aim of copy-editing is to ensure that whatever appears in public is accurate, easy to follow, fit for purpose and free of error, omission, inconsistency and repetition."1 Among the various types of copyediting is substantive, or content, copyediting whereby a copy editor is concerned with the overall structure, organization, and presentation of the ideas in a document. A copy editor may also be responsible for ensuring proper grammar and usage-this includes (and is not limited to) establishing consistency in terminology and abbreviations, optimizing word choice, and reducing ambiguity. The

RESA ROTH is a Quality Systems Specialist with Bio-Rad Laboratories in Woodinville, Washington. mechanical/proofreading aspect of copyediting comprises the review of punctuation, spelling, and labeling, and it may include the correction of typographical errors. Finally, a copy editor may review citations and cross-references and also fact-check when appropriate.

Some previous studies have analyzed the impact of copyediting on articles and papers. Vultee<sup>2</sup> studied how editing may affect audience perception of news articles and found that editing had a significant positive effect. Copyedited articles were rated higher in terms of impressions of professionalism, organization, writing, and value.<sup>2,3</sup> Wates and Campbell<sup>4</sup> examined the copyediting function using author versus publisher versions of articles and tracked the changes that occurred between the initial and final versions. They found that 42.7% (n = 47) of the changes were related to incorrect or missing references; 34.5% (n = 38) were typographical, grammatical, or stylistic; 13.6% (n = 15) regarded missing data; 5.5% (n = 6) were semantic; and 3.6% (n = 4) aligned the articles with journalspecific conventions.<sup>4,5</sup> Overall, Wates and Campbell<sup>4</sup> assessed that copyediting was an important function and it yielded greater article accuracy and integrity.

In the case of peer review, reviewers' perceptions of journal and conference submissions may be negatively affected by a lack of thorough copyediting; or, their perceptions may be elevated if careful copyediting has been performed. This article describes a study of the relationship between copyediting comments by reviewers and the eventual outcome of submissions under peer review.

#### Methods

The dataset used for this study comprised a large set of peer reviews of scientific papers from a popular computer science conference. The reviews were accessed from OpenReview. net, a website containing publicly available papers and reviews from many scientific conferences and journals (mainly in the computer/information science domain).<sup>9</sup> In an effort to promote openness in scientific communication, OpenReview is open access and open source, and it uses a cloud-based web interface and database to store manuscripts and reviews.<sup>9</sup> This study sourced 2,757 reviews of 913 submissions to the 6th International Conference on Learning Representations (ICLR 2018); this conference is

dedicated to advancements in the deep learning branch of artificial intelligence.<sup>10</sup> All submissions had at least three reviews, and a small number (n = 18) had four reviews.

To detect whether a reviewer had made a reference to copyediting, I first consulted various sources that define the scope of a copy editor and subgenres of copyediting.<sup>6-8</sup> I then compiled a list of 163 terms and phrases that encompass the various duties of a copy editor (or the concepts that one is concerned with when copyediting his/her own paper). These terms and phrases have a positive, negative, or neutral/unknown tone associated with them, and I grouped them as such. For example, a reviewer who uses the phrase "is clearly written" is probably complimenting the author (i.e., positive tone). An example of a review comment with a negative tone is the word "reorganize"; this would most likely not be used unless the reviewer was requesting that the author change the structure of the paper to improve it. Lastly, if a term such as "consistency" is noted in a review, it is unclear if this is a positive or negative statement without reading the review itself, so this would be counted under the "neutral/unknown" category. In addition to the tone categories, I further grouped the terminology into categories per type of editing and subtype (e.g., "substantive/content"  $\rightarrow$  "accuracy"; see Online Appendix 1).

To ensure that the terms and phrases were not dually counted, each term or phrase was unique and not a fragment of a larger phrase. For example, the word "clear" could not be included (by itself) because the "clear" count would include all instances of "not clear" and "clear" combined. It was essential that the positive and negative terms did not overlap. The use of longer and more specific phrases (i.e., "is clearly presented" versus "not clearly presented") allowed for the results to be interpreted more accurately. See Online Appendix 1 for a complete list of terms/phrases and editing categories.

Text-mining methods were applied to the OpenReview application programming interface to obtain the number of occurrences of terms and phrases from the predetermined list (Online Appendix 1) per review and the final paper outcome tied to the review: accept as oral presentation (2.5% of submissions; n = 23), accept as poster (34.3%; n = 313), invite to workshop (9.8%; n = 89), and reject (53.5%; n = 488).<sup>11</sup> To increase the hit rate, all terms were lowercased and all punctuation and hyphenation surrounding the terms were removed (e.g., "well-polished" became "well polished").

#### Results

Across the review set, 10,111 instances of copyediting terms or phrases from the predetermined list were identified; of those identified, 666 instances were positive, 2,564 were negative, and 6,881 were neutral/unknown in their nature. In addition, 83.4% of peer reviews contained one or more of the terms/phrases: 21.6% contained positive, 46.6% contained negative, and 70.3% contained neutral/unknown. Statistical analysis of these instances and their relationship to the outcomes of the review process are detailed below.

#### Most Frequent Copyediting Notations

The copyediting terms and phrases that appeared most frequently in the ICLR 2018 peer reviews (with 100 or more occurrences across the full dataset) are listed in order of descending frequency in Table 1. These are elements that reviewers appeared to focus on, and it may be useful for authors to consider and review how they are handling these components and concepts before they submit their manuscripts for review. By tackling potential copyediting issues in advance, authors may save reviewers time and effort that they would otherwise spend identifying copyeditrelated errors and allow reviewers to focus more on manuscript content.

#### Relationship Between Tone of Copyediting Terminology and Submission Outcomes

I also analyzed the relationship between the tone of terminology used in reviews and the outcome of the review process. Figure 1 displays the average occurrence of positive, negative, or neutral/unknown copyediting terminology across all four submission outcomes. To have a manuscript accepted to ICLR 2018 as an oral presentation is the most desirable outcome, but it only applied to the top 2.5% of submissions. Interestingly, submissions with the highest frequency of positive copyediting terminology (0.681 instances per review) and the lowest frequency of negative terminology (0.406 instances per review) were those accepted as oral presentations. Conversely, manuscripts that had the lowest frequency of positive copyediting terminology (0.199 instances per review) were those that were rejected. As may be expected, the use of neutral/unknown terminology was most common and also largely unchanged across the four outcomes. The standard error of the mean (denoted by the error bars in Figure 1) was higher for the neutral/ unknown tone category, as compared with the positive and negative groups; reviewer comments belonging to the neutral/unknown group may have ultimately been positive or negative in nature, which is a possible explanation for the increased variance observed in this group.

A multivariate analysis of variance (MANOVA) was performed using SPSS; testing reported statistically significant differences in terminology tone per submission outcome (*F* [9, 6695] = 5.003, *P* < 0.001, Wilks'  $\Lambda$  = 0.984,  $\eta_p^2$  = 0.005). After Bonferroni correction, statistical significance could be accepted at *P* < 0.017. Specifically, there was statistical significance for the positive terminology group (*P* < 0.001) but not for the negative group (*P* = 0.028) or the neutral/unknown

Term or Phrase	Tone	Numbers of Notations	Percentage of All Reviews Containing Term or Phrase*
Figure	Neutral/Unknown	1,167	22.52
Table	Neutral/Unknown	716	16.36
Not clear	Negative	698	17.77
Unclear	Negative	565	13.78
Language	Neutral/Unknown	462	9.03
Appendix	Neutral/Unknown	380	9.39
Clarity	Neutral/Unknown	363	11.10
Fig	Neutral/Unknown	332	6.75
Explain	Neutral/Unknown	321	9.25
References	Neutral/Unknown	287	8.31
ls well written	Positive	266	9.54
Reference	Neutral/Unknown	262	6.93
Label	Neutral/Unknown	253	5.30
Labels	Neutral/Unknown	248	5.55
Semantic	Neutral/Unknown	223	7.76
Confusing	Negative	218	7.91
Туроз	Negative	201	7.29
Notation	Neutral/Unknown	200	7.25
Figures	Neutral/Unknown	191	6.93
Clarify	Negative	155	5.62
Title	Neutral/Unknown	122	4.43
ls clear	Positive	117	4.24
Transition	Neutral/Unknown	116	4.21
Туро	Negative	112	4.06
Caption	Neutral/Unknown	106	3.84
Tables	Neutral/Unknown	100	3.05

Table 1. Most frequently used copyediting terms and phrases (with 100 or more instances in the review dataset). Also reported is the percentage of all reviews containing these terms or phrases.

\*The percentage of reviews is not proportional to the number of notations; the same terms/phrases may have been used multiple times in a single review.

group (P = 0.962). Tukey HSD post-hoc tests applied to the counts in the positive group revealed significant differences in the occurrence of positive terminology between the outcomes of accept as an oral presentation (0.406 instances per review) and reject (0.199 instances per review), as well as between the accept as a poster presentation (0.302 instances per review) and reject (0.199 instances per review).

#### Summary of Results

This study demonstrated that terminology and phrases associated with copyediting appeared with regular

frequency in peer reviews. In fact, 83.4% of peer reviews from ICLR 2018 contained one or more terms/phrases from the predetermined list: 21.6% contained positive items, 46.6% contained negative, and 70.3% contained neutral/ unknown. Table 1 shows the terms and phrases (from the predetermined list) that appeared most often. Submissions that were accepted as oral presentations (the most desirable outcome) had the highest frequency per review of positive terms/phrases and the lowest frequency of negative terms/ phrases; rejected submissions had the lowest frequency of positive terms/phrases (see Figure 1).



**Figure 1.** Average occurrence of positive, negative, and neutral/ unknown copyediting terminology per submission outcome. Error bars denote standard error of the mean (± SEM).

#### Conclusions

This study examined copyediting terms and phrases occurring in peer review comments and their relationship to the outcomes of the review process. There appeared to be trends tied to negative and positive copyediting terminology and the decision for a manuscript, with some statistically significant values. It is possible that these values achieved statistical significance because of the large sample size. Further research across additional peer review datasets could help establish whether these findings are more broadly generalizable. Future studies may benefit from a narrower set of terminology, including the use of fewer neutral/ unknown terms or an exclusion of this "tone" altogether.

Peer reviewers commented most often about clarity, writing, word choice, exposition, figures/tables/appendices, labels, references, and typos/punctuation. Presumably, it would be beneficial to invest more time in polishing these aspects of a scientific article. Research content is fundamental to a manuscript's consideration for acceptance to a conference or journal; still, acceptance may be boosted with careful copyediting. The fewer copyediting issues there are in a paper, the less time and effort reviewers will need to spend pointing these out—a win-win situation for everyone involved in the review process.

#### Acknowledgements

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# 2019 CSE Annual Meeting: A Recap

#### Mary K Billingsley and Shari Leventhal

Thank you to the 386 attendees (108 of whom were firsttime attendees) who joined us recently in Columbus for the 2019 CSE Annual Meeting. The meeting once again offered attendees a wonderful opportunity to network and learn from each other about the latest issues impacting scientific publishing. The meeting theme, "The Spirit of Scientific Publishing: Inclusion, Identity, Technology, and Beyond" was derived from Ms Jerrie Mock, first woman to fly solo around the world, and her red Cessna, the "Spirit of Columbus."



Welcome to CSE 2019 (Matt Reese Photography; https://www. mattreesephoto.com © 2019)

This year, CSE introduced its new Code of Conduct (https://www.csescienceeditor.org/article/cse-meetingsand-events-code-of-conduct) to remind attendees explicitly of its commitment to "diversity and inclusivity, and to providing a safe and welcoming environment that allows for free expression of ideas and productive dialogue." The Program Committee took this message to heart, encouraging

MARY K BILLINGSLEY and SHARI LEVENTHAL are Program Committee Co-Chairs for the 2019 CSE Annual Meeting. Mary is Managing Editor with the American Academy of Child and Adolescent Psychiatry. Shari is Executive Editor with the American Society of Nephrology.



Speakers from the panel "Diversity and Inclusion from Research to Post-Publication, Part I" (Matt Reese Photography; https://www. mattreesephoto.com © 2019)

moderators and session coordinators to seek out new voices and perspectives when recruiting speakers. To reinforce its commitment to inclusion, CSE offered a set of gender-neutral restrooms in the meeting space for the first time.

The preceding short courses were once again in the very capable hands of Nancy Devaux who enlisted exceptional faculty to speak during the enriching and interactive short courses. This year's courses included the brand new Advanced Publication Management Course and the following reoccurring courses: Publication Management Short Course, Short Course for Manuscript Editors, and the Journal Editors Short Course.

Following the business meeting on Monday morning, Marjorie Hlava gave a lively keynote presentation on her work in taxonomy and information systems. The next day, plenary speaker, Bernadette Melnyk, addressed the always-timely issue of work-life balance and self-care, encouraging everyone to move more and be mindful. Her colleague, Megan Amaya, moderated a panel discussion on work-life balance and wellness after the conclusion of the talk. Bernadette and Megan were both joined by the hotel's most popular employee, Ollie, a wellness dog. Earlier that morning, yoga with a local instructor, a first for CSE, was a smashing (and energizing) success, allowing attendees to find time for themselves during the busy and fast-paced meeting.

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We encourage you to check out the meeting reports written by volunteer attendees for a refresher on the session you attended and catch up on those you missed. Thanks again for joining us in Columbus, and we look forward to seeing you next year in Portland, Oregon!



Outgoing CSE President Anna Jester hands the ceremonial gavel to incoming CSE President, Dana Compton (Matt Reese Photography; https://www.mattreesephoto.com © 2019)





Keynote Speaker Marjorie Hlava (Matt Reese Photography; https:// www.mattreesephoto.com © 2019)

Plenary Speaker Bernadette Melnyk and Ollie (Courtesy of Bernadette Melnyk, @bernmelnyk)



Morning Yoga (Matt Reese Photography; https://www.mattreesephoto.com © 2019)

All full list of all of the presentations from the 2019 CSE Annual Meeting, including session descriptions and most presentation slides, can be found online at https://www.councilscienceeditors.org/events/previous-annual-meetings

### Keynote Address: Project Management: Chickens, Goats, and Kids

SPEAKER: Marjorie Hlava President Access Innovations, Inc. Albuquerque, New Mexico REPORTER: Peter J. Olson Senior Copyediting Coordinator Sheridan Journal Services Waterbury, Vermont

The world is changing, but Margie Hlava is ready for it.

In fact, she began adapting to change long ago as a "farm girl from Wisconsin," a deceptively simple moniker that belies the intense determination and fortitude that characterize her youth as well as her decades-long career as a project manager and renowned information scientist. Those who attended her keynote address at the CSE Annual Meeting in Columbus were offered a glimpse into her life and her extensive career and walked away with several pearls for navigating the increasingly convoluted—and risk-laden—ways in which we procure, distribute, and receive information.

Hlava began by regaling her audience with a series of endearing photographs and reminiscences that reflected a quintessential rural upbringing. Yet woven inextricably into this nostalgia were the hard-earned, invaluable life lessons that would prepare her for challenges she would face in her professional life, including-to name just a few-resilience (as when she moved 18 times before the 2nd grade); responsibility (as when she completed homework on the bus because there were chores to do at home); tenacity (as when she battled formidable weeds in the fields); and perseverance (as when her family collected food during the summers to survive the winters). These lessons proved particularly useful in 1985 when, while overseeing a data salvage and delivery mission for the Chemical Abstracts Service (which had lost 12 years' worth of abstract tapes), Hlava and her team were confronted by no less than an earthquake in Mexico, a hurricane in Jamaica, and a massive political protest in the Philippines-yet in the end, the project was delivered on time, under budget, and at the promised accuracy level.

In solving "The Case of the Missing Abstracts," Hlava acquired additional wisdom that would serve her well in the many ventures and projects that followed. The tenets of good organization and planning, meticulous categorization and classification, strong inventory control, and verification (and double-verification) of data accuracy were critical to the success of an 11-year business partnership with VINITI (a subsidiary of the All Union Institute for Scientific and Technical Information) and a contract with the Iron Mountain Repository to digitize all 5.4 million US patents, yet many of the greatest challenges were still to come. The world is in the midst of what many are calling "The Fourth Industrial Revolution," an age of technological advancement that is fraught with risks, pitfalls, and machinations that prompt trepidation and require extreme caution—but among the myriad things to fear about our current trajectory (including phone addiction, cyberterrorists, and information overload), Hlava placed artificial intelligence (AI) at the top of the list.

Al is becoming increasingly prevalent in countless industries, and in each case Hlava warned that there are substantial (and often multiple) risks inherent in the implementation and application of Al software. Insufficient training, incomplete and/or inaccurate data, and unsecured data are certainly recipes for disaster—and beyond that, biased models (which can lead to discriminatory outcomes), performance degradation (which can impact a software's long-term viability), regulatory noncompliance, and unethical use can all have a drastic impact on the efficacy of software programs that incorporate Al technology. Amidst all of this, there are the inevitable human–machine interface failures, some of which are more disconcerting than others.

One such failure is evident in the disturbing trend of search system manipulation, where online search systems are being "tricked" to control the information users receive. In such cases, Hlava said, system algorithms are personalized to each user's search history so that the information a given user receives is based on opinions they already hold, a lifestyle they already live, and conclusions they've already made. Inspired by a Google search comparison in which a conservative individual and a liberal individual received markedly different results for the relatively broad search term "Egypt," Hlava conducted a similar experiment with her staff, asking them to search for "Egypt" on their work computers as well as their home computers-and again, each search yielded completely different results, having been tailored to each staff member's online activity. This phenomenon was never more apparent than in the 2016 US election cycle,

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Marjorie Hlava

in which people's views and opinions were firmly set by the social media threads they followed, and Hlava warned that the 2020 election will likely see an even more extreme manifestation of this tactic now that it has proven effective.

In the end, it is the care that we take with AI technology that will prove most critical. Citing a multimillion-dollar health records project at The MD Anderson Cancer Center that was ultimately abandoned due to poor project management, Hlava said that projects of this scale must be considered, designed, and managed carefully depending on the mechanism—particularly because with AI, one must consider what's safe versus what's unsafe and what's predictable versus what's unpredictable. Yet even after following a sound progression of creating, enriching, and structuring content to make it "smarter," Hlava stressed that the job is not complete: the content must then be followed to discern how content owners are responding and to identify the directions in which content consumers are headed. In offering her vision of the future, Hlava cited Bill Gates, saying that "we're doing business at the speed of thought" and "technology isn't quite done with us yet." In order to keep up with rapidly changing trends and identify growth opportunities, scientific publishers—who until recently have been "hunters and gatherers," according to Hlava—must be more systematic in order to make their data more findable and trustworthy so that their readers can replicate a previous search and add new findings to the results. Additionally, challenging old assumptions will be a key component for success. Our unprecedented access to data will only increase, and the media through which they are accessed will make an increasing amount of difference.

In closing, Hlava at once encapsulated her talk, her career, and her outlook on life by framing a daunting prospect in an optimistic light: "The future's in our hands, and I think it will be a fun one." Technology may not be finished with us yet but on the bright side, the Margie Hlavas of the world aren't done with technology.

## Data-Driven Best Practices in the Editorial Office

#### MODERATOR: Jennifer Deyton Senior Partner

J&J Editorial, LLC Cary, North Carolina

#### SPEAKERS:

**Jennifer Cox** Editorial Client Manager J&J Editorial, LLC Cary, North Carolina

#### Kelly Hadsell Editorial Director KWF Editorial Baltimore, Maryland

REPORTER: Christina Nelson The Journal of Bone and Joint Surgery, Inc. Needham, Massachusetts

Utilizing an evidence-based approach to improving workflows and resolving issues is a smart way to obtain the attention and support of the often fact-minded scientific editors and key decision makers in the editorial office. In this session, the panelists described their various approaches to data that has informed their decisions regarding best practices for two key aspects of the submission process: author guidelines and reviewer resources.

Jennifer Cox first offered some examples of when usage numbers and demographic information has served to enhance the author guidelines for several of the journals she works with. Instructions for authors, which tend to be the first form of communication an author has with a publication, can particularly benefit from a close look at statistics. For the benefit of international authors, it may be a good idea to examine how



Figure 1. Data as a tool for reaching operational goals.

readable the manuscript guidelines are to a non-native speaker. Similarly, multiple instances of incorrect answers during the submission process may indicate the need to clarify or reword how certain submission questions are presented. As another example, a demonstrated increase in the number of papers with 100+ authors could signal a need to consider author limits on future manuscripts. Monitoring submission trends with this mindset allows editorial offices to quickly respond and adapt to changes that could otherwise develop into potential workflow issues (Figure 1).

Cox also highlighted the value of both the custom and standard reports that are readily available to journal staff in



Figure 2. Examples of operational audits.



Figure 3. Examples of educational resources for reviewers.

most manuscript submission systems. For example, an audit of declined papers could reveal a disproportionate number of rejections for a particular article type. This in turn may indicate a need to revisit the wording of how that article type is defined to authors or signal a need to enhance the guidelines surrounding what is acceptable for that article type. Using this data, journal staff can then proactively address author issues and improve the author experience.

It also can be helpful to perform regular internal operational audits to optimize staff productivity and user satisfaction (Figure 2). Editorial offices may consider performing timetracking studies using various apps and tools such as Toggle to identify process improvement needs among staff. Monitoring comment themes among email inquiries and author feedback surveys can also reveal pain points that then can be addressed, potentially saving time and frustration.

Reviewers also can benefit from data-informed approaches to optimizing the review process. Speaker Kelly Hadsell detailed some of the best practices that her publications have employed to support this key group. As a starting point, author feedback has indicated the need to have clear policies regarding the role of reviewers during the review process. In this regard, the CSE White Paper<sup>1</sup> serves as a good reference tool for learning about the overall guidelines and responsibilities of reviewers.

One trending area of development is the emergence of online reviewer courses. These tend to be free of charge and can be utilized by reviewers across many disciplines. Notable courses to explore include the ACS Reviewer Lab and Publons Academy.<sup>2,3</sup> Additional reviewer resources include the Committee on Publication Ethics website, materials on the CSE website, as well as the International Society of Managing and Technical Editors' website (Figure 3).<sup>4-6</sup>

Educating a journal's existing pool of reviewers can also be an effective way of managing the challenge of not having enough qualified reviewers for a given topic. If a society or publisher has the resources available, reviewers can also benefit from in-person training opportunities at conferences and mentoring programs with more experienced reviewers or editors. In this area, data can be very helpful in identifying areas of need, determining which approaches to take, and evaluating the success of new initiatives.

Both speakers illustrated the importance of considering data in several aspects of the publication process. While there are several ways to obtain this information, it was clear that a focus on the facts and willingness to act upon them will yield the most effective results when aiming at optimizing the workflow, which in turn results in happier authors, reviewers, and staff.

#### Links

- https://www.councilscienceeditors.org/resource-library/editorialpolicies/white-paper-on-publication-ethics/
- 2. https://www.acsreviewerlab.org/
- 3. https://publons.com/community/academy/
- 4. https://publicationethics.org/resources/guidelines-new/copeethical-guidelines-peer-reviewers
- https://www.councilscienceeditors.org/resource-library/editorialpolicies/
- 6. https://www.ismte.org/

# Providing the Right Resources for Reviewers

#### MODERATOR: Ben Mudrak

Product Manager American Chemical Society Durham, North Carolina

#### SPEAKERS:

Burlington, Vermont

**Robert Althoff** Associate Professor of Psychology University of Vermont

#### Liza Karlin

Senior Staff Editor Association of American Medical Colleges Washington, DC

REPORTER: Rachel Winfield Taylor & Francis Group Oxford, United Kingdom

Peer review is a crucial step in the academic publishing process, however training and resources for peer reviewers are not always readily available. This panel discussion shared examples of best practices and innovation in this area from 3 experienced journal editors.

Robert Althoff, Associate Editor of Journal of the American Academy for Child & Adolescent Psychiatry, opened the session by outlining the strategy he has built for teaching students about how to write an effective peer review. Althoff emphasized the importance of asking a series of fundamental questions before writing a review, including:

- What is the purpose of the study?
- What were the major findings?
- What questions are still unanswered?

He advised that a review which is helpful for journal editors will open with a paragraph summarizing the article's contents, such as the research question and key findings, along with a comment from the reviewer about the overarching relevancy and importance of the research. The rest of the review should consist of the reviewer's qualified opinion of the article.

An effective review is well-structured and clear for the editor reading it. As such, Althoff recommends that reviewers split their comments out into major and minor concerns. Reviewers could also consider numbering their comments, or structuring their reviews around each section of the manuscript. In particular, the best reviews make concrete, specific suggestions about which aspects of the manuscript need to be changed or developed, including challenging any ambiguous or unreferenced statements made by the author.

Ben Mudrak, Product Manager at the American Chemical Society (ACS), continued the session by sharing his insights

on reviewer training and tools from the ACS Reviewer Lab.<sup>1</sup> The ACS Reviewer Lab is a free online course which covers every step of the peer review process through 6 interactive modules. The course is not specific to chemistry, so it could be useful to reviewers working in other disciplines. The modules address the following areas:

- Introduction to peer review
- Ethics in peer review
- Preparing for review
- Assessing significance and technical quality
- Assessing presentation and readiness for publication
- Writing your review

The ACS Reviewer Lab has seen 9,000 enrollments and more than 3,000 reviewers have completed all six modules since its 2016 launch. Upon completion, program graduates have the option to indicate their interest in reviewing for ACS; interestingly, over two-thirds of graduates have become ACS reviewers. The program has been a great tool in expanding the ACS reviewer pool.

Originally, the training modules were only available in English, and so the majority of users (52%) were from the United States. However, more recently the ACS Reviewer Lab also became available in Chinese and Japanese, which has led to an increase in users from these regions (Figure). This highlights the importance of considering diversity and inclusion in any training resources which are produced for peer reviewers.

The third and final speaker at this session was Liza Karlin, Senior Staff Editor at Academic Medicine, who explored the numerous resources offered through the journal's online Reviewer Resource Hub.<sup>2</sup> The resources available from Academic Medicine began in 2001 with the publication of a guide to the reviewing process. In 2013, work began on building a more useful suite of resources which would assist peer reviewers at different stages and with different learning styles. These resources, which cover a range of formats and topics, include the following:

- AM Rounds: a series of informal blog posts sharing tips and advice, written by previous winners of the journal's annual Excellence in Reviewing Award
- Reviewer Recommendation Guidelines: a quick reference document which defines the different recommendations a reviewer might make (accept, reject, or major or minor

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Figure. Percent usage from China and Japan before and after Chinese and Japanese versions of the ACS Reviewer Lab were launched.

revisions) and provides example comments which might be included for authors and editors

- Review Criteria for Research Manuscripts, 2nd Edition: a dynamic and searchable document featuring a comprehensive checklist for both experienced and novice reviewers to use, written by scholars involved with editing and peer reviewing
- What Editors Want: An Overview for Reviewers: a training video designed to be consumed from start to finish, rather than as a quick reference guide
- **Practice Review Exercise:** intended for individual or group use as a training tool, this exercise shares a submitted manuscript and the peer review reports which were associated with it; trainee reviewers can compare their own reviews with the example given
- Advice from a Master Peer Reviewer: a podcast episode sharing insights from a seasoned peer reviewer for Academic Medicine

In 2014, the journal also started running interactive Reviewer Workshops. These typically start with a brief presentation exploring the basics of peer review, but then become more hands-on. Participants are given a manuscript and asked to write notes for a review, compare their comments with those received by the journal, and then discuss these notes as a group. These tailored workshops have a very flexible format, so the session could last any amount of time from an hour to a half-day.

Overall, the Reviewer Resource Hub has been wellreceived by users, although Karlin noted that it required a significant investment of time to develop. Even once new resources have been developed and published, it takes further investment to ensure they remain up to date—though the time commitment is much smaller to update or add to resources compared to developing them from scratch.

Following the 3 presentations, Mudrak opened the floor for questions and comments from the audience. One attendee mentioned that Publons offers free online training through the Publons Academy.<sup>3</sup> Other attendees expressed an appetite for more resources designed as "refresher courses" for seasoned peer reviewers, rather than beginners, or even a structured rubric or marking scheme to which reviewers could refer.

Overall, this session at the 2019 CSE Annual Meeting was informative and interesting. The speakers offered attendees a range of exciting perspectives on how to better serve their peer reviewer community with the training, tools and resources they need at every stage of their careers.

#### Links

- 1. https://www.acsreviewerlab.org/
- https://journals.lww.com/academicmedicine/Pages/ForReviewers. aspx
- 3. https://publons.com/community/academy/

## Shared Open Source Infrastructure in Workflow

#### MODERATOR:

Heather Staines Head of Partnerships MIT Knowledge Futures Group Trumbull, Connecticut

#### SPEAKERS:

Maël Plaine Product Manager eLife Cambridge, United Kingdom

#### Andrew Smeall

Chief Digital Officer Hindawi London, United Kingdom

#### Jennifer Regala Managing Editor American Society of Plant Biologists Rockville, Maryland

REPORTER: Lettie Conrad Maverick Publishing Specialists Los Anceles, California

This expert panel was opened by Heather Staines, Head of Partnerships for MIT's Knowledge Futures Group, who points to commercial and resource consolidation trends in the publishing industry as one driver toward adopting open source (OS) technologies. In particular, university and nonprofit initiatives are on the rise to increase flexibility and avoid proprietary lock-in, in support of research sustainability, reproducibility, transparency, data reuse and portability, as well as end-user control and privacy. The 2.5% Project is a Mellon-funded initiative that encourages university libraries to defer 2.5% of their acquisitions budgets to support OS infrastructure on their campuses. The Global Sustainability Coalition for Open Science Services (SCOSS) is a global network of associations committed to an open future for research, supporting initiatives like the 2.5% Project, as well as investing in SherpaRomeo and Directory of Open Access Journals (DOAJ).

Maël Plaine, Product Manager of eLife, an STM journals publisher backed by various research funders, further addressed their motivations for building an OS infrastructure in publishing. Their mission is to leverage the power of web technologies to accelerate research and discovery across various disciplines. Proprietary infrastructure solutions risk dependence on a single provider, where maintenance and standards compliance can be difficult, demanding a need to keep up with fast moving technological development. In contrast, eLife has established a shared OS infrastructure in collaboration with several organizations, such as the Collaborative Knowledge (Coko) Foundation.

Libero (https://libero.pub) is the open-source publishing and service platform built by eLife. In addition to their

own publishing program, eLife has the goal of building an end-to-end OS journal publishing solution, addressing all publisher, producer, and reviewer functions. They draw their development priorities from workshops with researchers, content providers, and other stakeholders, powered by a community of developers and service providers. Anyone is welcome to join the community via their Slack account, email newsletter, Trello roadmap, various events, and activity on social media.

Working in concert with eLife and other publishers, Hindawi is a gold open access (OA) publisher of nearly 230 journals and a service provider to societies and publishers, both open and traditional. Chief Digital Officer, Andrew Smeall, explained that Hindawi also aims to offer an endto-end OS system, where Coko powers submission and peer review systems, and Libero powers all post-acceptance functions. The benefits of this OS approach are freedom to customize; and, while it went unmentioned, benefits also include a publishing platform solution free from the sorts of companies involved in the consolidation referenced at the start of this panel (such as Elsevier, Wiley, etc.).

Hindawi rebuilt their platform in 2017, after analyzing options for building or buying workflow software. They generally found these OS solutions to have low barriers to entry and many easily available tools at much lower costs to publishers. Now live, they plan to continue to "code in the open" as they maintain and develop the platform, sharing their roadmap widely and making base code available on Github for others to leverage.

Demonstrating a feature-level example of OS publishing development, Managing Editor Jennifer Regala of the American Society of Plant Biologists shared her experience of adding web annotation to The Plant Cell journal using Hypothesis. Regala evaluated the resources and costs required to meet the online annotation needs of readers and editorial boards, and she found that Hypothesis offered a solution for promoting their open peer-review summaries. These peer-review summaries are published as supplementary data to the journal's site on the HighWire platform, but lacked visibility. Creating an annotation with links to the summaries will hopefully drive more traffic to them. Regala reflected that it can be challenging to add new tools to an already busy pipeline of papers for the small, stretched staff at the society and editorial team. However, they found success with the Hypothesis feature and are considering how best to extend it to other journals in the future.

A lively discussion with the audience followed these presentations. One attendee asked for clarification regarding if or how an underlying database, metadata extraction, or reporting are handled on OS platforms. Smeall mentioned that using JATS4R compliance is key and that standards like ORCID and other identifiers will be coming soon to their platform to account for these issues. Plaine also noted eLife has a new database product coming soon, Libero for Data, which will be compatible with third party providers. Smeall encouraged publishers to get involved and build the integrations and solutions they need.

Another attendee asked how authors should be involved or if they engage in OS platform development. Smeall mentioned that 10% of article submissions come in PDF format, which is very difficult to convert to XML, so they are looking at an improved HTML-based authoring system. Plaine suggested that author tools should have XML on the back end, regardless of how the interface is designed. This way, documents are more interoperable and transparent.

The moderator asked panelists to reflect on OS factors in technology decision making. Regala mentioned that it was key in their decision to integrate with Hypothesis, especially the assurance that they owned the annotations and could port them to other sites. Smeall noted that, whereas before they had more freedom to skip steps or add internal workarounds, now Hindawi is more diligent and accountable in their development practices. The panelists noted securing buy-in for OS decisions sometimes requires a multi-prong strategy, both internally and externally, in community building. Smeall suggests that publishers be honest and realistic about OS investments, being wary not to oversell or rush into meeting all needs from day one. Plaine suggests we might first focus on cost and the potential risk of alternatives. The panelists welcome everyone to participate and engage in building OS industry standards.

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# Two Sides of the Same Coin: What Does Production Need From Editorial and What Does Editorial Need From Production?

#### MODERATOR:

Heather DiAngelis Manager, Journals Production

American Society of Civil Engineers Reston, Virginia

#### SPEAKERS:

#### Michael Casp

Director of Business Development and Production Services Coordinator J&J Editorial Cary, North Carolina

#### **Nancy Devaux**

Process Improvement Manager Sheridan Journal Services Waterbury, Vermont

"The way to build strong relationships is through communication." —Nancy Devaux

**Ruth Isaacson** 

Genetics Society of America

Associate Production Editor

Providence, Rhode Island

American Mathematical Society

Pittsburgh, Pennsylvania

Managing Editor

**REPORTER:** 

**Becky Rivard** 

The transfer of materials from Editorial to Production can often feel like a one-time handoff, with each side not always clear what is needed. Instead, we should view it as an ongoing communication in which both sides work together toward a common goal. In this session, several speakers discussed the viewpoints of Editorial and Production, shedding some light on what each department needs from each other and how to bridge the gap between the two sides.

First, Ruth Isaacson from the Genetics Society of America (GSA) discussed collaboration and integration with Sheridan, the provider of production services for GSA's two peer-reviewed journals. As a small publisher, GSA relies on Sheridan for support. Isaacson suggested having QA checklists, giving standardized requests to authors, documenting and evaluating workflows, and above all, having things ready from the start to prevent delays later in the process. Some specific examples include having annual audits of the metadata collection, XML feeds, and documentation, and creating LaTeX and digital art guidelines for authors.



Next, Michael Casp talked about Production based on his experience at J&J Editorial. He summarized that Editorial is more relationship-based, while Production is more processbased; in both cases, it is important to define responsibilities and review procedures every so often. Casp stressed the importance of communicating changes both ways (Editorial to Production and Production to Editorial). He discussed an example project where Editorial and Production created an Excel spreadsheet to document all of their tasks, which



allowed them to see redundancies, gaps, and unnecessary steps. Casp recommended evaluating workflows routinely and defining responsibilities. It is important to remember that we are all on the same team.

Finally, Nancy Devaux from Sheridan talked about metaphorically going from shaking hands to holding hands; that is, having a vendor-society relationship built on trust. When Editorial and Production have the same goals, they work better together. Some specific tips she gave include making manuscript submissions as complete as possible before handing them off to Production, keeping schedules on track, sharing clear expectations, and having open discussions whenever changes are being considered. Like the first two speakers, Devaux emphasized communication as the key to successful relationships between Editorial and Production.

In a brief Q&A, the moderator and speakers again brought up the importance of documentation, checklists, and communication as a two-way street.

# Innovation in the Publishing Space

#### MODERATOR:

**Leslie Walker** American Chemical Society Columbus, Ohio

SPEAKERS: Lettie Conrad

Maverick Publishing Specialists Los Angeles, California **Theresa Schwope** American Chemical Society Columbus, Ohio

REPORTER: Rachel Winfield Taylor & Francis Group Oxford, United Kingdom

What does innovation look like in academic publishing, and how does it come about? This panel session at the CSE 2019 Annual Meeting explored the theme of innovation with presentations from two experts in production and publishing strategy.

Lettie Conrad, Senior Product R&D Associate at Maverick Publishing Specialists, opened the session by talking about the questions we need to ask in order to establish a culture of innovation. If innovation means bringing about new thinking and new methods to help us manage a changing landscape, then the most important question is: "How can I best support future research practices and future expectations for research communications?"

Conrad went on to talk about "design thinking." This term describes a range of human-centred approaches to solving problems and managing change. Innovation fundamentally requires us to go beyond our comfort zones, and design thinking can be a useful tool to help us do this. Another useful framework for thinking about innovation is the build-measure-learn cycle. Rather than taking one big, transformative step, try making a series of smaller changes informed by data and evidence. Gather data from a range of sources to support your decision-making, from customer service records and web analytics, to white papers and competitor marketing materials.

Conrad then shared two case studies from Maverick Publishing Specialists as examples of well-informed innovation being put into practice.

The first case study looked at a technology service provider who wanted to move from their existing enterprisemodel to a consumer-model. Maverick Publishing Specialists advocated for a contextualized approach by creating a dozen different profiles for their users. These profiles varied by role, geography, age, and background, and honed in on the information tasks they were looking to achieve on the technology platform. Through this approach, they were able to identify a new product opportunity for the company.

The second case study looked at using a range of audits and tests to assess the visibility of a journal's content, encompassing analysis of search engine optimization, heuristic user experience testing, evaluation of metadata, and a CrossRef audit, to name a few. This holistic approach built up a clear picture of the journal's content visibility. This, in turn, informed a set of new business practice recommendations, from developing new key performance indicators and building a cross-functional task force, to

revising vendor relationships and establishing new indexing partnerships.

Conrad ended her presentation by sharing three top tips for innovating:

- Start small, fail fast. This means beginning with shortterm experiments in innovation. Get to the heart of your goals by addressing the key pain points, but don't invest a lot of resource at this stage.
- 2. Put the user at the center and keep them there. A user-centred approach will serve you best in responding to changing practices. Use data and evidence about your users to build up accurate personas and profiles for them so that you understand your community better.
- 3. **Innovate at all levels**. Question your fundamental assumptions and use design thinking and the build-measure-learn framework to innovate and solve problems creatively.

Theresa Schwope discussed how to foster innovation within a publishing production environment. In addition to her position as Associate Technical Editor at the American Chemical Society (ACS), she is also their Innovation Funnel Leader. In this role, she inspires staff to produce innovative ideas and then works to implement the best ideas in the department.

The production department at ACS is naturally efficiency-focused and metrics-driven, which lends well to fostering a culture of continual improvement through innovation. To help encourage innovation from everyone within the department, the Innovation Incubator Group was established.

This Group is an employee-led committee of free thinkers who meet once a month to brainstorm ideas and build on them collectively. Anyone within the department is free to join this group, which has a collaborative and supportive atmosphere. Ideas are discussed initially within this setting, and then more structured ideas are submitted to the Innovation Funnel.

The Funnel is a more structured committee that investigates and develops all suggestions which are brought to them (for example, doing a cost analysis or discussing possible implications on other teams) and then takes the final proposal to a management committee for a final decision on implementation.

The Innovation Funnel initiative has been very successful within the ACS production department, with 45% of staff members submitting at least one idea to the Funnel. The team also runs workshops and events to encourage innovative thinking and generate Funnel submissions; these are very well attended and have had a strong positive response from staff.

Following the two presentations, moderator Leslie Walker opened up the floor for questions. Audience members asked how to get buy-in for the innovation program. Schwope indicated you only need a few passionate individuals who are natural advocates for the topic, and then it snowballs from there. It's also worth advertising any events or workshops, and proactively reaching out to people for their ideas.

Another audience member asked about how much of a challenge office hierarchy is, when it comes to innovation in the workplace. How can we break down barriers of who is "allowed" to innovate? Schwope said their office culture is open enough that all staff are encouraged to bring ideas to the Innovation Incubator Group or directly to the Innovation Funnel. They deliberately designed the process of developing ideas to be collaborative so that staff at all levels feel free to get involved.

Overall, this session at the CSE Annual Meeting was inspiring and useful. The speakers shared lots of excellent ideas and initiatives on how to introduce innovation within a publishing context, but many of these suggestions could easily translate to any workplace setting.

# Fire of the Week: Protecting Patient Privacy Online

#### **Emilie Gunn**

In the age of electronic health records, it has become more and more important to safeguard data that could violate a patient's privacy. Privacy and data security are especially important in the realm of clinical trials, where data has been collected about each patient enrolled in the trial. Patients and clinicians have an invested interest in protecting their protected health information (PHI).

PHI refers to any information in a medical record that could be used to identify an individual patient and is relevant to that patient's diagnosis or course of treatment. This could include demographic information, test results, preexisting conditions, insurance information, or any other information a health care provider collects that is unique to that patient.<sup>1</sup>

This installment of Fire of the Week describes a situation involving PHI that arose recently at a medical journal, what happened, and how it informed that journal's processes for the future. Given the sensitive nature of the information involved, and to ensure as much privacy as possible, this article is being published anonymously, using information as it was relayed to me. —Emilie Gunn

#### Describe the "Fire." What Happened? Who Was Involved? How Did the Situation Arise?

I answered my phone early on a Monday morning to an author who was utterly distressed. We had published her article in one of our journals on Friday afternoon, and she realized with horror that her published article included a link to an Excel spreadsheet that contained PHI. Any editor reading this will probably recognize that sinking feeling I had as soon as I heard those words. I looked up the article on our journal website and confirmed that, indeed, the spreadsheet in question contained a tab that listed each patient enrolled in the trial by first and last name, date of birth, diagnosis, specific drugs and treatments administered, and all other points of information relevant to the trial question.

EMILIE GUNN is Managing Editor, American Society of Clinical Oncology.



The author's institution, including the department head and privacy office, was already aware of the breach. The authors had discovered the problem first thing on Monday morning when looking over their recently published article, and notified us as soon as they realized what had happened.

We discovered the problem had arisen with a data supplement. Like many journals, we publish data supplements that often include additional raw data pertaining to the trial. This may mean anonymized patient level data, gene sequences, or other information that does not need to be in the print version of the article, but may give a deeper understanding of the trial to readers, or aid in reproducibility. These data supplements are not copyedited, but are published in whatever form the authors supply them. Editorial staff checks them before sending them to production, but mostly just to ensure the files can be opened and viewed correctly. In this case, the authors had included an Excel spreadsheet with several tabs, one of which was not immediately visible upon opening the file. A reader would have to click the arrow at the bottom of the sheet to be taken back to the first tab to see the data stored there. It was that tab that included the PHI.

### Where Did You Go and What Resources Did You Utilize to Arrive at a Solution?

We immediately contacted our digital team who quickly removed the link to the data supplement so that we could look into the situation and correct it. While the supplement was offline, we conferred with the authors and their privacy office, our digital and production teams, and our legal team to determine how this had happened and how we could get the supplement back online quickly without it containing the information in question. Beyond determining how this happened, we also wanted to figure out how many people had viewed the article, and most importantly, how many had opened the data supplement. The author's institution also wanted to know how many staff members had viewed the spreadsheet during the course of the article submission and review process. Countless emails were traded over the course of several days to make sure that everyone had as much information about the situation as possible. This would ensure we could examine it from every angle, determine the extent of the damage, and correct it.

#### What Possibilities Did You Consider? Why Did You Decide Against Those?

There were not many options when it came to repairing the damage that had been done. It was clear that the data supplement needed to be removed from online, the file replaced, and the link to the corrected supplement reposted.

### How Did You Resolve the Problem? What Was the Outcome?

The authors were quick to supply us with a new data supplement, which we reposted. Of course, the author checked—and we double checked—that the correct version was indeed posted. We considered posting a note with the article that the original supplement had been removed and replaced with the current, correct one, but decided against that in the end. The removal of the PHI from the supplement did not change the outcome of the study, and ultimately we did not feel that sharing that we had corrected the supplement would benefit readers.

While the resolution in this case was clear, what was less clear was where other copies of the spreadsheet were stored, how to find them, and how to contain their spread. We began asking ourselves whether we needed to contact any readers to ask them if they had downloaded the spreadsheet, and if so, to ask them to destroy any copies of it. The author's institution also asked us to work with our submission system and website host to destroy any copies of the file that had been stored in those systems in the course of manuscript submission, review, and preparation for publication. It proved to be harder than expected to determine exactly how many people had viewed the spreadsheet, and where electronic copies of it might live.

From download data, we were able to determine that the only people to download the spreadsheet from the journal website were staff, and that it had been viewed only in the course of our regular work with the peer review process. We contacted the reviewers to ask if they had viewed it (no), and then contacted our submission system to remove the files (easier said that done, unfortunately). Eventually, all electronic copies that we had were destroyed, even those in the submission system.

#### Will You Change Any of Your Policies or Day-to-Day Procedures Based on This ccurrence?

Like many journals, we publish appendices, which are usually additional tables or information the authors chose not to include in the manuscript, and data supplements, which are generally much longer, and tend to be large tables, additional figures, or data sets. When a paper is being prepared for production, editorial staff views any files labeled "data supplement" to determine if that is the correct label. Beyond just briefly scanning the content, we did not do anything else to those files.

Since this experience, we have updated our acceptance procedures to include a check of the type of information in the data supplement files to ensure there is no PHI contained in them. Typically, we check for patient names, or anything else that might be a red flag. We use a checklist for accepted papers, and have added instruction that staff should contact their manager for guidance if they have any doubts about something they see. This doesn't take much time, and is a bit of insurance against something like this happening again.

#### Conclusion

In a digital age, it is inevitable that more and more of our personal information will be stored online. Any publication would be wise to have a plan in place for what to do if they find that private information has been published. Knowing what to look for, and what to do, will ensure a quick and complete resolution to a situation that no author or journal wants to experience.

#### Link

1. https://searchhealthit.techtarget.com/definition/personal-healthinformation

We want to hear about your experiences! What situations have you encountered on the job that were unique, or especially challenging in some way? Have you had to work through an unusually complicated author misconduct issue? Dealt with less than positive press about your publication? Your story may help others learn what to do when they come across something similar.

There is a template available online at www.csescienceeditor.org (click "For Authors") that will help you get started.

# Gatherings of an Infovore\*

#### **Barbara Meyers Ford**

#### PLAN S: Where Is It Now?

Just when journal publishers were beginning to really wrap their heads around how to remain viable with all the variations of Open Access in journal publishing, a new plan came into town.

PLAN S is the brainchild of Robert-Jan Smits, former Open Access Envoy of the European Commission, and Marc Schiltz, President of Science Europe. The initiative was born from the cooperation among the major public funders of research in Europe with significant input from the Scientific Council of the European Research Council. Unveiled on September 4, 2018, by cOALition S, a consortium of initially 11 European research funders (see https://www.coalition-s.org/funders/ for the full list of national funders, charitable foundations, and European funders), Plan S is a set of principles designed to advance the cause of Open Access.

Described on the cOALition S website (https://www. coalition-s.org) by the EU Ministers of Science and Innovation, the key statement of greatest concern to publishers reads: "...driven by our duty of care for the proper functioning of the science system, we have developed Plan S whereby research funders will mandate that access to research publications that are generated through research grants that they allocate, must be fully and immediately open and cannot be monetised in any way."

Initially set to take effect in 2020, this primary principle requires that authors funded by coalition members make their research available for free immediately upon publication. The challenge to publishers is how to accommodate such a mandate in hybrid and subscriptionbased journals.

After receiving feedback from all corners of the research and publishing community, revised principles and implementation guidance were released in late May 2019 pushing the start date into 2021.

As of this posting, the coalition is being led by its interim coordinator, Robert Kiley, Head of Open Research at Wellcome Trust.

\*A person who indulges in and desires information gathering and interpretation. The term was introduced in 2006 by neuroscientists Irving Biederman and Edward Vessel.

#### The Initial Release of Plan S

Open-Access Plan in Europe Bans Publishing in Paywalled Journals:

https://www.the-scientist.com/news-opinion/open-accessplan-in-europe-bans-publishing-in-paywalled-journals-64748



As reported in a September 4, 2018, *Nature* article: "The initiative is spearheaded by Robert-Jan Smits, the European Commission's special envoy on open access. (The 'S' in Plan S can stand for 'science, speed, solution, shock', he says)."

Initial reactions from all types of publishers fell squarely in the category of shock.

Radical open-access plan could spell end to journal subscriptions: https://www.nature.com/articles/d41586-018-06178-7?utm\_source=briefing-dy&utm\_medium=email&utm\_ campaign=briefing&utm\_content=20181105

European funders seek to end reign of paywalled journals: https://science.sciencemag.org/content/361/6406/957?\_ ga=2.112031044.1916309108.1559509957-27009446.1555623694

The above article in *Science* is not Open Access. The Summary provided on the article page, however, gives a very complete overview of the key aspects of the initial Plan S as described in early September 2018.

Frustrated with the slow transition toward open access (OA) in scientific publishing, 11 national funding organizations in Europe turned up the pressure this week. As of 2020, the informal group will require every paper resulting from research funded by its members to be freely available from the moment of publication. They will no longer allow the 6- or 12-month delays that many subscription journals now require and will ban publication in socalled hybrid journals. The move means that grantees from these funders will have to forgo publishing in thousands of journals, including some high-profile ones. OA advocates applaud the bold step, but traditional publishers are not pleased.

From Principles to Implementation: cOAlition S Releases Implementation Guidance on Plan S:

https://www.coalition-s.org/implementation-guidanceon-plan-s-now-open-for-public-feedback/

Europe's Plan S aims for expansion to US and beyond: https://www.timeshighereducation.com/news/europesplan-s-aims-expansion-us-and-beyond



Since September of last year, commercial publishers and scholarly societies have been developing responses in order to make their attitudes known toward whichever "S" you might choose to describe this newest European concept about how to distribute the results of research.

Scientific societies worry Plan S will make them shutter journals, slash services:



https://www.sciencemag.org/news/2019/01/scientificsocieties-worry-plan-s-will-make-them-shutter-journalsslash-services



In a May blog article (also posted on LinkedIn), Steven Inchcoombe, Chief Publishing Officer at Springer Nature, set forth "A faster path to an open future" with an accompanying infographic. Inchcoombe describes a way to progress the concept of Plan S without crippling the publishing industry in the process. He suggests that "[t]o make it easy to recognise compliance with this standard, those meeting the criteria could be called a Transformative Publisher. The full proposed requirements of this standard can be found here: https://resource-cms.springernature. com/springer-cms/rest/v1/content/16705468/data/v2.

"Essentially, a Transformative Publisher would commit to continuously increase the average level of OA take-up across its whole fully owned journal portfolio, at least at the rate of research funding bodies, institutions and consortia."

https://www.springernature.com/gp/advancingdiscovery/blog/blogposts/a-faster-path-to-an-openfuture/16705466

#### Where Are We Now?

Radical open-access plan delayed a year as revised effort seeks more support:

https://www.sciencemag.org/news/2019/05/radical-openaccess-plan-delayed-year-revised-effort-seeks-more-support

Open access: Plan S launch delayed until 2021: https:// www.sciencemag.org/news/2019/05/radical-open-accessplan-delayed-year-revised-effort-seeks-more-support

As noted in the two previous articles, cOAlition S heard publishers (mainly from Europe but they were joined by those in the U.S. and even a few from South America) and have made some modifications to the original concepts.

#### **The Revised Plan S Principles and Implementation Guidance** *Part I: The Plan S Principles*

"With effect from 2021, all scholarly publications on the results from research funded by public or private grants provided by national, regional and international research councils and funding bodies, must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories without embargo."

	Open Access publishing venues (journals or platforms)	Subscription venues (repository route)	Transition of subscription venues (transformative arrangements)
Route	Authors publish in an Open Access journal or on an Open Access platform.	Authors publish in a subscription journal and make either the final published version (Version of Record (VoR)) or the Author's Accepted Manuscript (AAM) openly available in a repository.	Authors publish Open Access in a subscription journal under a transformative arrangement.
Funding	cOAlition S funders will financially support publication fees.	cOAlition S funders will not financially support 'hybrid' Open Access publication fees in subscription venues.	cOAlition S funders can contribute financially to Open Access publishing under transformative arrangements.

### Part II: Guidance on the Implementation of Plan S

*Plan S Compliance.* All scholarly articles that result from research funded by members of cOAlition S must be openly available immediately upon publication without any embargo period.

cOAlition S Releases Revised Implementation Guidance on Plan S Following Public Feedback Exercise:

http://www.stm-publishing.com/coalition-s-releasesrevised-implementation-guidance-on-plan-s-followingpublic-feedback-exercise/



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Allen Press and Silverchair Announce Partnership to **Expand Online Publishing Technology for Society Publishers** 





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