

SCIENCE EDITOR



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IN THIS ISSUE:

TRANSPARENT PEER REVIEW: A CASE STUDY
GENETICS PEER REVIEW TRAINING PROGRAM
INCLUSIVE LANGUAGE: RACE AND ETHNICITY

PREVENT DISEASE



CARELESS
SPITTING, COUGHING, SNEEZING,
SPREAD INFLUENZA
and TUBERCULOSIS



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VIEWPOINT

70 Learning from Each Other Jonathan Schultz

FEATURES

72 Transparent Peer Review—A Practical Solution to Implement Open Peer Review at Scale: A Case Study Marc Domingo and Simon Harris

77 Supporting the Next Generation of Researchers: GENETICS Peer Review Training Program Ruth A Isaacson, Sarah N Bay, and Megan M McCarty

82 Evaluating Social Media Tools for Driving Journal Readership: A Case Study Geoffrey S Shideler

INTERVIEW

85 Jasmine Wallace: Mastering the Art and Science of Peer Review Jonathan Schultz

ANNUAL MEETING REPORTS

89 Keynote Address: Improving Openness and Reproducibility in Scholarly Communication Peter J Olson

91 Project Management Fundamentals for the Editorial Office Heather Blasco

93 Open Access and Plan S: An International Comparison Judy Connors

DEPARTMENTS

95 Inclusive Language: Race and Ethnicity Stacy L Christiansen

97 Scientific Style and Format Update: Capitalize Racial and Ethnic Group Designations CSE Board of Directors

98 No Mo' FOMO: Using Social Media to Avoid Missing that Conference after All Jennifer Regala

100 Recent Updates to the CSE White Paper Jennifer Deyton, Patricia K Baskin, Erin McMullan, and Kelly A Hadsell

102 Book Review: American Sherlock: Murder, Forensics, and the Birth of American CSI Morgan Sorenson

103 Gatherings of an Infovore: Reviewing Peer Review Barbara Meyers Ford

On the cover: Octopus (*Benthoctopus levis*), by Ewald Rübsamen. Included in the *Die Cephalopoden* written by Carl Chun (c. 1910) (Credit: https://en.wikipedia.org/wiki/Ewald_Heinrich_R%C3%BCbsamen). Thank you to the Public Domain Review (<https://publicdomainreview.org/>) for highlighting this public domain image.



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Learning from Each Other

Jonathan Schultz

Often when finalizing an issue of *Science Editor*, I'll realize a theme has emerged organically. For this Fall 2020 issue, many of these articles focus on how we can learn from one another. In the case studies in this issue, readers will find authors sharing their experiences so others may follow in their success and avoid their missteps. Additional articles describe ways to share information and skills so that others can get the most out of the editing and peer review process.

In an article that does both, Marc Domingo and Simon Harris provide a blueprint for implementing transparent peer review (TPR) in "Transparent Peer Review—A Practical Solution to Implement Open Peer Review at Scale: A Case Study." For journals interested in TPR (i.e., publishing reviewer comments and author responses with an article), the authors provide a wealth of information and materials that can be applied to any TPR process if their exact workflow isn't right for your journal. One goal of TPR is to provide readers with every possible bit of information that may aid in reproducing the research findings. For many readers, they may be superfluous, but for some, a key detail in a peer review report may save a fellow researcher from following a misguided path that was addressed during peer review but not clear in the published article. Published peer review reports also provide valuable insights into the peer review process at a journal, informing potential submitters and reviewers of the standards and rigor of a journal's review process.

Because of its importance in the scientific enterprise, it's not uncommon for scientists to lament the dearth of formal peer review training. Exposing the review process via TPR helps, but there is no substitute for providing early career researchers with hands-on experience reviewing manuscripts. Although this can occur informally through mentoring in labs, it is important also to have initiatives such as the one described by Ruth Isaacson, Sarah Bay, and Megan McCarty at GENETICS in their recent article, "Supporting the Next Generation of Researchers: GENETICS Peer Review Training Program." The team at GENETICS recognizes that great reviewers need to be trained, and experienced editors and reviewers can help in this process. They have developed a comprehensive program providing this training to dozens of Genetics Society of America members each year and their article is a comprehensive framework for other journals and organizations to follow. High quality peer review relies on knowledgeable, engaged researchers, and reviewer training programs are essential to keeping a journal's collection of reviewers well stocked.

At its core, peer review is about sharing insights and information among peers so that researchers can learn from each other and move science forward. But that does not

quite happen organically most of the time. To achieve high-quality peer review, it typically takes high-quality editors and staff to facilitate it, as discussed in the profile of Jasmine Wallace, Peer Review Manager at the American Society for Microbiology, who spoke about her work in "Mastering the Art and Science of Peer Review." In her profile, Jasmine shares some of the skills and personal attributes she thinks are necessary for success in scientific editing and publishing and provides an optimistic outlook on the future of peer review. For more on peer review, be sure to read Barbara Meyers Ford's "Gatherings of an Infovore," filled with resources and information she has collected on the latest developments and controversies on this ever-changing subject.

Any discussion of sharing and learning from colleagues and experts in this 21st century must include social media, and two articles in this issue touch on how journals and editors can get the most from these platforms. As Geoffrey Shideler describes in his article "Evaluating Social Media Tools for Driving Journal Readership: A Case Study," when the American Water Works Association started a new journal, they wanted to share their articles widely and needed a strategy to do so effectively. They began with more traditional methods such as emailed tables of contents (eTOCs) and then moved to social media. However, by the time they started on this phase, dozens of articles had published and had never been promoted on social media by the journal or association. This delay is what makes this case study truly interesting: by separating publication, eTOCs, and social media promotion by months, they have distinct events they can use to measure article downloads. As seen in their example figure, a huge spike occurred just after sending eTOCs and then again after the social media posts. Because the social media posts occurred so long after initial publication, this #BirdBump (as Geoffrey calls it) is almost certainly the effect of social media and likely resulted in hundreds of readers finding these articles for the first time.

Another way we learn from each other is at meetings and webinars, such as the CSE's Annual Meeting, Fall Symposium, and regular webinars. Even when you are not presenting at a meeting, you can still share what you are learning as Jennifer Regala regales in her new column, "No Mo' FOMO: Using Social Media to Avoid Missing That Conference After All." Jennifer explores how social media, particularly live tweeting, can help us get the most out of all the amazing meetings and conferences occurring each month by excerpting and posting useful tidbits and insights. If you've ever followed a conference hashtag when you

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couldn't attend, Jennifer shares some helpful tips so you can return the favor and live tweet your next meeting.

Another avenue for sharing insights from a conference are Meeting Reports, such as those published in this issue from the CSE Annual Meeting in May 2020. First, our regular Keynote reporter, Peter Olson, recounts of Brian Nosek's "Keynote Address: Improving Openness and Reproducibility in Scholarly Communication." Dr. Nosek's Center for Open Science received this year's CSE Meritorious Achievement Award and their dedication to helping researchers, journals, and other stakeholders improve the transparency and share data and research freely and easily is outlined in his presentation. Next, Heather Blasco reports on the session, "Project Management Fundamentals for the Editorial Office," and the skills needed to implement complex projects at a journal or organization. Good project management skills are essential to an initiative's success because as session moderator Emma Shumeyko notes, "By breaking down a project into different phases, you can better put it into perspective, and force yourselves to establish goals from a 10,000-foot view." Lastly, Judy Conners reports from the session, "Open Access and Plan S: An International Comparison," assessing how Plan S and other open access initiatives are transforming the way journals are sharing and supporting research and data.

As an organization, CSE also strives to provide its members and the scientific publishing community with guidance through resources such as the "White Paper on Publication Ethics." In 2018, the CSE Editorial Policy Committee began updating the White Paper on a rolling basis, and Chair Kelly Hadsell and co-authors provide an overview of recent changes, including the roles and responsibilities of authors, editors, and sponsors, in their column, "Ethical Editor: Recent Updates to the CSE White Paper." The CSE Book Club is also a great way for members to share and learn while discussing an interesting book, as can be seen in Morgan Sorenson's review of the recent Book Club selection, "*American Sherlock: Murder, Forensics, and the Birth of American CSI*."

Finally, one of the reasons for sharing and learning from each other is to grow collectively, to better ourselves and society through our shared experiences and knowledge. But society and science have not always ensured that everyone

can benefit from these gains equally, many times actively excluding certain groups and demographics. Progress to reduce these disparities is slow-going, but there are steps that journals can take to further it. How editors, authors, and journals report on research participants can make a difference as described by Stacy Christiansen in her new Style Bites column on "Inclusive Language: Race and Ethnicity." Updating how demographics are reported using some of the thoughtful and sensitive language choices as recommended by recent updates to the AMA and other style guides not only improves the representation of historically underrepresented groups, but also improves the quality of the research itself, by forcing authors to be more descriptive and specific (for example, by discouraging meaningless demographics terms such as "Other"). Likewise, the CSE Board of Directors recently approved a similar update to *Scientific Style and Format*, encouraging authors to "Capitalize Racial and Ethnic Group Designations."

When viewed as a whole, the initiatives, projects, and recommendations shared in this issue of *Science Editor* help point the way to a more transparent, thoughtful, rigorous, social, and inclusive research and scientific publishing ecosystem.



Velodona togata, by Ewald Rübsamen. Included in the *Die Cephalopoden* written by Carl Chun (c. 1910) (Credit https://en.wikipedia.org/wiki/Ewald_Heinrich_R%C3%BCbsamen). Although the extent of its intelligence is debated, the nervous system of the octopus is comparatively large and complex, with some evidence that they are capable of learning (see, e.g., <https://www.scientificamerican.com/article/the-mind-of-an-octopus>)

Transparent Peer Review—A Practical Solution to Implement Open Peer Review at Scale: A Case Study

Marc Domingo and Simon Harris

Abstract

There is an increasing demand for more transparency in peer review due to the potential benefits that this could offer. However, open peer review is notoriously challenging for publishers to implement. IOP Publishing (IOPP) partnered with Publons (part of Clarivate) to develop upon the existing Publons Transparent Peer Review (TPR) service using application programming interfaces (APIs) in order to deliver an optimal solution for their TPR pilot. The API-based system ensured that minimal manual work was required on the publisher's side. This pilot tested the demand for TPR from both authors and reviewers on 3 IOPP journals using ScholarOne. The collaboration on this highly efficient TPR system led to a successful pilot, with the uptake of TPR from authors and reviewers on the pilot journals relatively high. These positive results led to IOPP planning to roll out TPR to all of its open access journals.

Introduction

Opening Up Peer Review

Peer review is the process of subjecting an author's scholarly work, research, or ideas to the scrutiny of other experts in the same field. Reviewers and editors invest valuable time and effort into ensuring that only high quality research is published. Traditionally, the peer-review process has been closed in scientific publishing.

Making this process visible to the community increases accountability and allows reviewers to be recognized more for their hard work. This may provide an incentive for them to contribute quality reviews in a timely manner, potentially improving research integrity and overall review quality. The

review content may also be of educational value, particularly to trainee reviewers. There have been growing demands for the publication of peer-review reports (particularly in the biosciences¹). The Publons Global State of Peer Review report² found a growing interest in opening up peer review, with younger researchers, in particular, valuing increased transparency.

With transparent peer review (TPR), the peer-review content is published, but reviewers may remain anonymous if they prefer (as opposed to open peer review, which requires the naming of reviewers).

Challenges Setting Up TPR

The process of making peer review transparent is notoriously challenging for journals to implement due to the existence of diverse entwined systems used in different aspects of the publishing process, such as the submission of manuscripts, peer review, production, and online hosting of the articles.

IOPP Publishing (IOPP), like numerous other publishers, wanted to test the demand for TPR in their communities in the areas of physics and materials science, as well as biomedical engineering and environmental science. IOPP investigated the possibility of setting up an in-house transparent peer-review workflow in 2018. While doing so, they were faced with multiple challenges. IOPP's workflows cross 3 separate systems: the submission and peer-review system (ScholarOne), the production system (Proton) into which accepted articles flow, and the system that hosts the published journal content online (IOPscience). In order to extract and host the relevant content, a substantial amount of development work would have been required across these systems.

Developing a minimum viable product which would have moved the decision letters (including reviewer reports) into the production system, and which subsequently would have been posted as a PDF file along with the published article, was technically challenging. The development work was likely to be rather time-consuming, especially the changes

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to IOPscience. In addition, the in-house solution likely would have required ongoing manual work (e.g., by production staff when making the review content live).

IOPP and Publons TPR pilot

Because of the challenges that IOPP faced in setting up TPR, in 2019 IOPP and Publons (part of Clarivate) partnered in a pilot of Transparent Peer Review, the industry's first cross-publisher, scalable transparent peer-review workflow based on ScholarOne technology (also part of Clarivate; note that this specific TPR setup is currently only available to journals using ScholarOne). This service works within established systems to support TPR, greatly reducing the work required by the publisher.

In the first stage of this partnership, TPR would be rolled out across 3 IOPP journals: *JPhys Materials* (JPMat), *Journal of Neural Engineering* (JNE) and *Environmental Research Letters* (ERL), in a 1 year pilot program to test the demand for TPR from the authors and reviewers on these journals. The Publons TPR workflow provides readers with the possibility, when reading an article, to access a comprehensive peer-review history including reviewer reports, editor decision letters, and author responses. Each of these peer-review elements has an individual digital object identifier (DOI), which can be easily referenced and cited. This workflow complies with best-practice data privacy regulation, ensuring the individual preferences of authors, peer reviewers, and journals are maintained. Publons and IOPP worked together to develop and optimise this TPR system for their pilot.

Publons TPR system

Publons TPR is a configurable product on 3 different levels: author opt-in/-out, reviewer opt-in/-out, and reviewer reports signed/anonymous (Figure 1). Journals are able to decide if they want all their authors and reviewers to opt-in by default or have the choice to opt-out, and if desired they

could require that all the reviewers sign with their name, sign as anonymous, or give them the choice.

The chosen TPR journal configuration is then set up on that journal's ScholarOne submission page, where authors and reviewers will have to answer the TPR-related questions upon the submission of a manuscript or of a reviewer report, respectively.

- *Submission form question:* "This journal is participating in a trial of Transparent Peer Review. If you (and all of the reviewers) agree then the reviewer reports, your responses, and the editor's decision letter will be linked from your published article, should your article be accepted. If you choose to decline, the peer-review content will not be published. Accept/Decline"
- *Report form question:* "This journal is participating in a trial of Transparent Peer Review. If you (and the other reviewer(s) and authors) agree then the reviewer reports will be linked from the published article, should the article be accepted. If you choose to decline, the reviewer reports will not be published. Accept/Decline"

Once provided with an accepted article from the journal, Publons retrieves the answers to the questions from ScholarOne for each accepted article and determines which ones are part of TPR. For the articles that are opted-in to TPR, Publons builds an article page where the peer-review history will be published and each TPR element (reviewer reports, decision letters, and author responses) will be assigned an individual DOI. On publication of any articles with TPR, a link is made from the journal article page to the Publons page containing the review history.

IOPP decided to have all 3 journals in the pilot with the same configuration. This is to allow both authors and reviewers to opt-in/-out of TPR, and with opted-in reviewers free to select whether or not they want their names revealed on their reports.

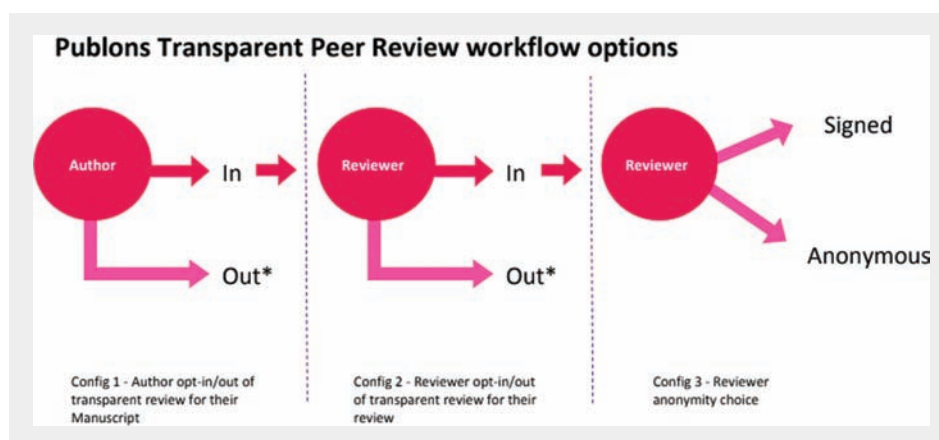


Figure 1. Configuration choices for Publons Transparent Peer Review. *If either author or reviewer opts out then transparent peer-review workflow is not implemented for that manuscript.

API Development for Accepted Articles

In order to target the production stage of IOPP's publishing workflow, IOPP and Publons worked together to develop an API that enables Publons to easily and automatically receive an accepted article feed from Proton, IOPP's production system. Such a development was desirable for IOPP because it removed the need for them to manually compile and send details of accepted articles to Publons on a regular basis, saving the publisher a significant amount of time. Other publishers may send production reports on a weekly basis in order to inform Publons which articles have been accepted in the last 7 days.

Publons Badge

Publons and IOPP also worked together to develop a way to seamlessly display the peer-review content available at Publons for any given article (Figure 2). Publons developed a JavaScript widget that uses the article's DOI to do a single reference to the Publons API to verify what peer-review content is available in Publons. In addition to checking for the peer-review content for the article it also confirms the number of times an article has been cited on Web of Science (WoS), which is also part of Clarivate.

Publishers can embed the Publons badge on their article hosting platforms (IOPscience in IOPP's case), and depending on the data that Publons has on that article, a badge will show 1 of 4 categories:

1. Transparent peer review: Publons hosts reviews that can be seen on the Publons article page—blue badge with a red counter indicating the number of reviewer reports for that article.
2. Claimed reviews: On Publons, one or more reviewers have claimed recognition for their review of that article—blue badge (but no review counter).
3. No peer review for the article on Publons: There is no peer-review content for the article on Publons, but there is

peer-review content available on other articles published by the same journal in the last 12 months—gray badge.

4. No peer-review content for the article or any other articles from the same journal—no badge.

The appropriate badge automatically appears when an article is published in any of the 3 pilot journals. Hovering the mouse pointer over the badge shows a summary of the open data available at Publons (Figure 2). For TPR articles, this information includes how many times the article has been cited according to the WoS core collection, the number of peer-review revision rounds, the number of reviews and how many of them are anonymous, the number of decision letters, and the number of author responses, as well as some additional information on the journal that published the article. Clicking on the badge takes the reader to the peer-review content on the Publons article page, saving the publisher the task of manually building links to this content.

Publons TPR Article Pages

Publons hosts the peer-review content on the Publons article pages. The link format of a Publons article page is always the same: <https://publons.com/publon/> + Article DOI (e.g., <https://publons.com/publon/10.1088/1741-2552/AB5E08/>). The Publons article pages allow the community to score the article with the Publons score, and to write community reviews discussing the article or the peer-review history (Figure 3).

The peer-review content appears in a descending chronological order (most recent, first). Visible is the each peer-review element and the assigned DOI. Every peer-review element can be individually endorsed by Publons users. Below the content of each peer-review element is the name of the person(s) who wrote it, the editor who signed the decision letter, the authors and author responses and, if the reviewer signed with their name, the name of the reviewer.

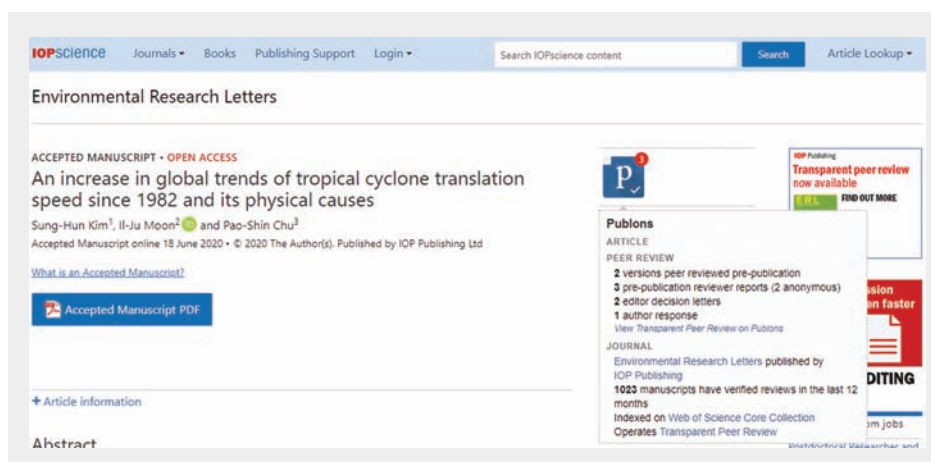


Figure 2. Open Publons badge summary of an IOPP article page hosted on IOPscience for an article with transparent peer review content.

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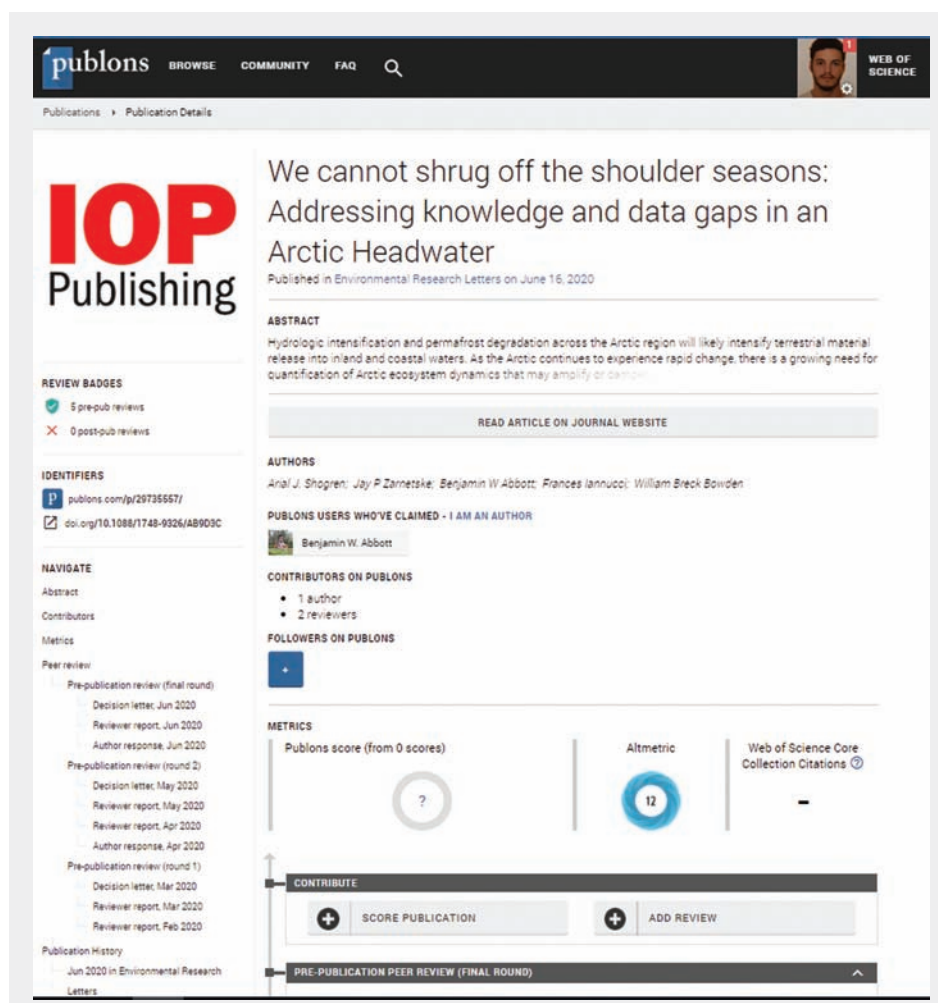


Figure 3. Example of a Publons article page with transparent peer review content available. The peer-review history can be observed at the bottom left corner under the “Navigate” heading.

If the reviewer signed the reviewer report and additionally claimed recognition on Publons, the name of the reviewer will link to the reviewer’s Publons profile, including showing their picture if they have one on their profile (Figure 4).

Preliminary Results of IOPP Pilot

The main aim of the pilot program was to test the demand for TPR from both authors and reviewers, all of whom have to opt-in for a paper to be published with the peer-review content with it. Note that if either the authors or a reviewer opts out, then the peer-review content is not published. The main measure of success was the uptake from authors and reviewers: We hoped that the majority of both would opt-in (i.e., “Agree”) to TPR. The results from the first 6 months of the pilot are shown in Table 1.

There is little variance between the 3 fields covered (neural engineering, environmental science, and materials science), with the majority of authors opting for TPR for

each journal. The author agreement rate of nearly 60% is in line with that reported by *Nature*,³ and comfortably higher than the uptake of 39% recently reported by PLOS.⁴ The agreement rate for reviewers is a little lower, but still approaching 50% (as far as we know, this is the first time that the demand from reviewers has been measured in this way). Most papers are only reviewed by 2 reviewers, and the proportion of papers with all reviewers agreeing to TPR is just under 20% (given that the author must agree too, we find that a little under 10% of articles are published with the peer-review content). For reviewers who opted in for TPR, most (over 80%) chose to remain anonymous. We have received uniformly positive feedback from authors who opted for TPR and had their papers published with the review content.

We have seen no observable impact on the willingness of reviewers to report under the TPR model, and no change in the average time to first decision. We have seen a small

Table 1. The number and percentages of authors and reviewers agreeing/declining to have the peer review content published on the 3 IOPP Publishing trial journals in the first 6 months of the pilot.

January–June 2020	Authors		Reviewers	
	Agree (%)	Decline (%)	Agree (%)	Decline (%)
JNE	353 (54)	296 (46)	278 (49)	291 (51)
ERL	1074 (59)	757 (41)	679 (45)	827 (55)
JPMat	109 (58)	79 (42)	52 (41)	74 (59)

JNE = *Journal of Neural Engineering*; ERL = *Environmental Research Letters*; JPMat = *JPhys Materials*.



Figure 4. Example of a reviewer report displayed on a Publons article page, in which the reviewer has signed the review with his name and claimed recognition for his review on Publons.

increase in average review quality since implementing TPR on these journals, with a slightly higher proportion of reports receiving the maximum “3” rating in ScholarOne for reviewers who opted in for TPR, compared with those who declined. Finally, we have seen no change in editor behavior since implementing TPR (in fact, editors are not aware of whether authors/reviewers have opted for TPR until after the first decision stage). There is little extra work required by journal staff, other than for TPR articles where the author response has been submitted as an attached file. The Publons TPR system does not currently handle attachments.

Future Publons TPR Initiatives

Publons is currently working on 2 main initiatives to improve TPR. First, being able to retrieve from ScholarOne any reviewer

reports, decision letters, and author responses submitted as attached files, and display them with the rest of the peer-review content published on the Publons article page. This will enable the complete publication of all submitted peer-review content without the need for any manual work. Second, both Publons and IOPP are exploring ways to show more useful content on the Publons badge, so that it can be seen directly from the journal article page. An example of this could be flagging the name of the reviewers if they have agreed to sign the reviewer reports with their name.

Conclusion

The outcome of the partnership between IOPP and Publons is a more efficient and elegant solution to offering TPR for journals that use ScholarOne as their manuscript submission and peer-review system. In this API-based system, there is minimal manual work required on the publisher's side. For any publishers looking to publish the peer-review content in their journals, we would suggest focusing on keeping manual work for staff to a minimum in order to increase scalability. To this end, we would recommend using APIs for requesting/transferring data between systems. It is also important to carefully consider the wording of the TPR questions on the author submission form (and the reviewer report form, if applicable). Ensuring that this is clear (and linking to supporting information) may help to increase the author/reviewer opt-in rates.

Given the positive results of the pilot program to date, in particular the relatively high demand from authors, and the scalability of this TPR system, IOPP is planning to roll out the TPR option on all of its fully open access journals in the near future. This is a key part of IOPP's Open Physics initiative.⁵

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- <https://iopublishing.org/open-physics>

Supporting the Next Generation of Researchers: GENETICS Peer Review Training Program

Ruth A Isaacson, Sarah N Bay, and Megan M McCarty

Abstract

A lack of formal peer review training hinders the development of the next generation of peer reviewers. In 2018, the Genetics Society of America launched a formal program to help early career researchers improve their peer review skills in a live journal environment with direct feedback from editors. This article summarizes the history, operation, and some outcomes of the program.

It is no secret that peer review training is both varied and informal.¹ A 2015 survey by Wiley² showed that 35% of respondents obtained peer review training as advice from supervisors or colleagues, 32% from a journal's instructions for reviewers, and 18% from the Committee on Publication Ethics (COPE)'s ethical guidelines. Publon's 2018 Global State of Review found that 39.4% of survey respondents received no peer review training and that 80% believe more training would positively impact peer review.³

This lack of training is not indicative of a lack of interest in the peer review process. When asked, 77% of respondents indicated they would like to receive further reviewer training, and for respondents with 5 or fewer years of reviewing experience, the interest jumped to 89%.² This finding is echoed in Sense about Science's 2009 and 2019 surveys of peer review.⁴ COPE's Ethical Guidelines for Peer Reviewers⁵ dedicates a section to training and mentoring that encourages early career researchers to take advantage of free tutorials available online, such as those provided by Publons or Sense about Science.

While online modules already available to peer reviewers provide a wealth of knowledge, few programs allow researchers to improve their peer review skills in a live journal

environment and to receive direct feedback from editors. Addressing this gap in available resources was part of the impetus for the formation of the GENETICS Peer Reviewing Training Program. Now in its third year, the program has provided 200 Genetics Society of America (GSA) members, who are organized into cohorts by application cycle, with live peer review experience. In addition to receiving virtual training, early career researchers are able to actively engage with the process. This leads to the development of both critical thinking and scientific writing skills as they write reviews, observe experienced reviewers evaluating manuscripts, learn how editors synthesize reviews to arrive at a decision, and receive direct feedback on their own reviews from working editors.

Program History

GENETICS is GSA's flagship journal; its notable history began in 1916, and the journal has grown and evolved to meet the changing needs of authors and readers for more than a century. GENETICS is organized into topical subsections based on subfields of genetics research. Each section is overseen by a Senior Editor, who evaluates papers on suitability for the journal and then assigns them to an Associate Editor to oversee the peer review process.

In response to the lack of formal training in the peer review process—especially training that comes with hands-on experience and professional feedback—the GSA Publications Committee, the GENETICS Editorial Board, and Sonia Hall (former Director of Engagement and Development at GSA) launched the GENETICS Peer Review Training Program.⁶

Work on the program began in 2017 with the development of training workflow and materials, reporting and benchmarking plans, and the initial application process. It also required investment in customizing workflows within the manuscript submission system to best support the vision of the program. This upfront investment of development hours and staff time allowed for automation of the review and feedback workflows—a crucial component that allows the program to run smoothly while reducing daily staff intervention.

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Prior to the launch of the full program, a pilot was conducted in 3 of the journal's 10 sections. This allowed time for troubleshooting and provided staff with information on how best to engage journal editors, since editor buy-in and participation are crucial to the success of the program. After the conclusion of the pilot program, GENETICS Editor in Chief Mark Johnston and journal staff conducted meetings with editors across the journal to introduce them to the program, educate them on the process, and address their questions and concerns.

Application Process

The GSA solicits applications on an annual basis, and eligible applicants are limited to GSA members who are senior graduate students up through junior faculty. Preference is given to applicants who have experience with peer review from the author's point of view (particularly as first author), although this is not a requirement. All applicants are asked to state what they want to achieve through participation in the program in terms of both professional and career development.

Applications are reviewed by a committee comprising GSA journals staff, GENETICS editors, and past early career reviewers (ECRs). Because a past cohort rolls off in the same year that a new cohort starts, careful consideration is given to each section's coverage needs and manuscript submission volume, as well as how many ECRs remain from the previous cohorts. Avoiding unbalanced ratios of ECRs to incoming manuscripts is a priority, as participants must have ample opportunities to review during their 2-year term. The application process is competitive—only 17% of applicants were accepted in the last cohort—but applicants are encouraged to re-apply and are given preference in future application cycles. Applicants who are not selected are also provided with feedback about their application and where they could improve.

Introduction to Peer Review

Upon acceptance to the program, participants form a new cohort that completes, as a group, approximately 5 hours of virtual training through 2 web conferencing sessions led by journal staff, GENETICS editors, and past program participants. The first session outlines the program policies and expectations, discusses the principles and ethics of peer review, and closes with an open discussion led by past ECRs about their experiences in the program. The second session looks at the journey of a manuscript at GENETICS, best practices for peer review, user experience in the manuscript submission system, and closes with a practice review session led by GENETICS editors.

The original introductory programming was substantially longer, but participant feedback led to the transfer of some

content to the program training manual to be reviewed independently by participants prior to web conferencing sessions. The practice review, for example, is now completed by ECRs ahead of the second session and is provided to editors in advance for individual feedback. This frees up time in the sessions to discuss the reviewing experience, including the challenges that participants faced while completing the review.

Hands-on Experience in Peer Review

After successful completion of the 2 introductory sessions, program participants are assigned to a section of GENETICS based on their expertise, and some participants are cross-listed in sections to increase their chances of encountering manuscripts that fit their specialties. Participants receive review invitations for all initial submissions sent to their assigned section(s); this happens automatically within the submission system and does not require action from the Associate Editor or staff. Once one ECR agrees to review a manuscript, the other ECRs who have been invited to review that manuscript are notified that they are not needed. To address concerns about fairness, especially given differences in time zones, any ECR who has already reviewed for GENETICS must wait 72 hours after the review request to accept. Additionally, no ECR may review more than one manuscript at a time without staff permission.

After submitting their feedback, the ECR receives a copy of the other reviews, as well as the decision letter that is sent to authors. Associate Editors are asked to provide feedback through an automated form, which gives the editor checkbox prompts and open-ended questions to evaluate the ECR's review (Table 1). Out of all the training offered in the program, participants found this approach to be the most useful for identifying areas for improvement and validating their hard work and progress.

Program Metrics

Participants who apply and are accepted into the program come from many career stages; however, our last cohort comprised largely Postdocs (61%), followed by Research Associates (26%) (Figure 1). Research Associates are generally experienced Postdocs who have gained a more permanent position within a lab.

Much of the work published in GENETICS deals with model organism systems (such as mouse, *Drosophila*, yeast, etc.), and model organisms are diversely represented in both applicants and participants. Some high-demand topical areas, such as gene expression, continue to draw many qualified ECRs.

Looking at the demographics of the applicants and participants themselves, the latest cohort was equally balanced in terms of gender—and though approximately

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Table 1. Checkboxes and questions for editor feedback form.

Checkboxes—Overall Quality	Checkboxes—Scientific Rigor	Textboxes—Feedback RE:
The review was clearly written	The review effectively highlighted key issues with the manuscript	The review effectively highlighted key issues with the manuscript
Tone of the review is professional and polite	Evaluation of the scientific rigor was an appropriate level of detail	Reviewer's determination of whether this manuscript is a good fit for the journal
The review revealed a strong grasp of the material	Scientific comments provided by the reviewer were accurate	Comments for this reviewer that could help them improve the quality of their future reviews
The review was an appropriate length	Additional proposed experiments would add significantly to the quality of the manuscript	
The reviewer had sufficient scientific expertise to provide an appropriate review	Additional proposed experiments are feasible within a reasonable timeframe	
Use of jargon is sufficiently minimal		

17% of GSA members hailed from outside the United States in 2020, the latest cohort in the Early Career Training Program represented a slightly more international group (27%). However, increasing racial and ethnic diversity among the candidates who apply and are accepted is an ongoing area for improvement. Future outreach is planned to recruit more potential applicants from non-R1 institutions (institutions that have very high research activity), as well as from historically Black colleges and universities.

Early career reviewers in the program have completed over 468 reviews, which is a completion rate of 93%. On

average, ECRs complete reviews more quickly than traditional reviewers, in 12.71 days vs. 22 days, respectively. Editors note this speed and commitment by ECRs, and it is not uncommon for editors to reach out to ECRs to re-review resubmissions. Overall, editor feedback to participants is overwhelmingly positive. Editors complete 59% of the requested feedback forms for participants, often providing detailed feedback and statements of praise or encouragement that go beyond simply critiquing the review (Table 2).

Feedback was also solicited from ECRs throughout the program, and their responses highlight the success of the overall program design: 95% of participants indicated that the overall experience was valuable, and 86% expressed that editor feedback helped them to see the strengths of their review. A similar number reported that reading the other reviews helped them pinpoint the strengths and/or weaknesses of their review.

Besides increasing their understanding and awareness of the science in their field, participants reported developing and strengthening many “soft” skills, such as determining when to seek advice and effective time management.

Participants also indicated that the program experience has impacted their confidence in reviewing manuscripts, because they now have a better understanding of how to frame and effectively communicate their feedback in a constructive manner. Many indicated that as they continued to review, they learned to be more critical and selective in accepting manuscripts to review, that they needed to start their reviews sooner, and that they learned to refine requests for additional experiments and look at the experimental methods more closely.

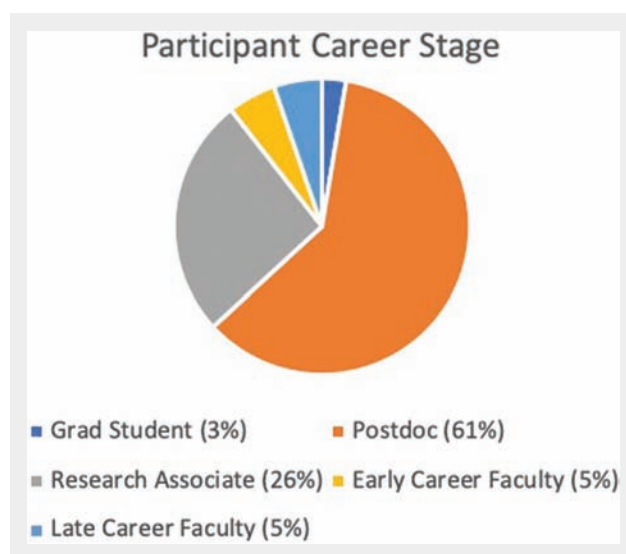
**Figure 1.** Career stages of accepted early career reviewers in cohort 5.

Table 2. Editor feedback examples.

- Your comments were *EXTREMELY* useful, particularly in identifying areas to improve rigor and precision of language—For example, you pointed out the limited information provided for the definitions used to define the 6 classes of boundaries and issues of strong statements of proof. THANKS!
- This was an outstanding review, thank you. It was just the right level of detail, and highlighted all of the major strengths and weaknesses of the manuscript. Nice job.
- This was a high-quality submission and your review was spot on in asking a few good questions that the authors can readily address without requiring additional experiments.
- Your review was very careful and appropriate. In this case, the paper was very solid and in good shape overall, so there weren't many major experimental issues to address. Instead, the major issue was in some presentation details. Even though my own research is on *C. elegans* gene expression, I found certain aspects of the paper tricky to follow, so I agreed with your assessment. I think you hit on these trouble points well and pointed them out in a professional manner. Your comments will make the authors take a second look and improve the paper's readability substantially. I think you did a good job!
- Overall, great job. I would love to have this reviewer review for me again.

Program Challenges

It is important for publishers and societies who wish to launch a peer review training program to consider both current and ongoing resource availability. A substantial amount of time was needed to plan and launch the program, but even now—2 years from the initial launch—regular staff involvement is required to manage various aspects of the program, including yearly application review, training/onboarding of new cohorts, and day-to-day tasks, such as inbox management.

Editor engagement has been an ongoing challenge of the program; despite the work done to inform editors of the program launch and the related workflow changes in the manuscript submission system, staff could not prevent all cases of potential confusion or miscommunication. But the time that staff took to closely work with editors and hear their feedback allowed for continual improvement of the resources that were provided to editors, as well as of the program itself. One of the most substantial changes resulted from an editor's desire to know more about the expertise of the ECRs in their section—the GENETICS website now features a dedicated page to introduce each ECR to the GSA community.⁷

Additionally, real-world experience is necessarily constrained by real-world submissions. The program's goal is for each ECR to review at least 1 paper that fits their expertise while they are in the program; however, if no appropriate paper is submitted during that time, the affected participants will have their terms extended in order to afford them more opportunities to gain experience with manuscripts that are directly relevant to their expertise.

Finally, there is a concern that those who complete the program might be underutilized because they might appear to editors to be too junior to serve as a regular reviewer or editorial board member. To address this, all participants rotate into the GENETICS reviewer pool after completion of the program and tagging within the manuscript processing

system clearly labels them as ECR alumni, communicating to editors that they have the experience necessary to provide solid reviews. Our hope is that the program design—2 years of reviewing accompanied by editor feedback—leads to editors recognizing these ECRs and thus returning to them as regular reviewers post-program completion. Currently, we see that editors do invite ECRs to re-review resubmissions—and also invite them personally to review new submissions. Additionally, some participants have gone on to author accepted submissions at the journal.

Future Considerations

Though the GENETICS Peer Review Training Program has undoubtedly created new opportunities for early career researchers, staff will be implementing new reporting to measure long- and short-term program outcomes. We want to evaluate who is best served by the current offerings in terms of topical expertise and participant demographics—and who we still need to reach. Overall, our goal is to be able to speak to how the program is furthering the mission of the society to help mentor and thus include a more diverse subset of the community we serve.

The ongoing pandemic has forced staff to re-evaluate our previous assumptions, from how staff resources are allocated to how we address potential editor fatigue and availability in our volunteer base of Associate Editors. Plans are underway to further automate and/or streamline program workflows to continue to minimize regular staff intervention and ease any burdens on editors. And as institutions in higher education continue to feel the effects of shrinking budgets and limited time in the lab, will we see a decrease in program interest from early career researchers as some simply do not have the bandwidth to invest in career development or even begin seeking career opportunities outside of academia?

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Many unknowns await us, but we hope that by continuing to seek input from all stakeholders and improving our own reporting capabilities, we will be better positioned to enhance the program and provide what our early career researchers tell us they need—ongoing training and support as they establish themselves in their careers and contribute to the broad community of genetics and genomics research.

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Evaluating Social Media Tools for Driving Journal Readership: A Case Study

Geoffrey S Shideler

Busy editorial offices trying to keep up with publishing trends should evaluate the tools available to them to ensure they are having a measurable outcome. In this case study, social media was evaluated for its ability to drive readers to a new peer-reviewed journal.

The competition for reader attention is high. There are easily tens of thousands of scientific journals—as well as an endless number of other media platforms and an ever-changing landscape of digital connectivity—creating an overwhelming number of places for readers to go for information. This has resulted in an explosion of ideas for editorial offices to attract reader attention. This race for novelty and attention has the potential to strain an editorial office already at capacity trying to keep up with all the other trends and movements in publishing.

Several great ideas have been proposed in the discussion for attracting readership, including graphical abstracts, article videos, journal podcasts, and more. At conferences, these ideas are easy to discuss, and listening to bigger publishers with a lot of resources give an overview of them creates excitement; but to implement them effectively when editors get back to the office takes real resources. Editorial offices can strain to keep the normal production wheels turning efficiently—trying to meet the demand of quick times to publication—so some of these ideas can challenge capacity and require that other things be moved aside to create the space needed to implement them. Further, the proper execution of these strategies can be challenging, especially for smaller publications with more limited resources. Doing something and doing something *well* are not necessarily the same thing. How can editorial offices juggle all of these initiatives and determine which of them are worth their time? Perhaps more importantly, which of them are truly effective and not simply creating work for the sake of the appearance of innovation? Our

association's publishing group discusses this often, and the answers are rarely easy or straightforward. Like many association publishers, we have limited resources (time being chief among them), and we want to be sure any projects we launch have a measurable outcome before we commit our sacred bandwidth.

A New Association Journal

The American Water Works Association (AWWA) is a nonprofit member organization in support of the drinking water industry. The association's flagship periodical, *Journal AWWA*, has published articles continuously since 1914 on the science, technology, and management of water. The magazine has historically had a mix of content ranging from thought-leadership pieces to highly technical peer-reviewed science. In recent years, there was a desire from the association for this flagship periodical to be more accessible and conversational, so the business decision was made to separate out the peer-reviewed content and publish it in an online-only platform—a new journal titled *AWWA Water Science*. Launched in 2019, the start of this new peer-reviewed title presented several challenges, perhaps the largest being journal visibility and researcher engagement.

Our membership of approximately 50,000 individuals had been accustomed to our printed and distributed content in our magazines, and they were used to that content being sometimes very dense and technical. Changing the tone and voice of the magazine had its own unique challenges, but promoting to the marketplace that our peer-reviewed articles were in a new location was very much top-of-mind. Further, our editorial team now had to manage the content for multiple periodicals, so our bandwidth for taking on projects was somewhat limited. As we evaluated strategies for driving readership, we wanted to ensure that whatever we tackled had the desired outcome, and we wanted any added work to be organic to our workflow so it wouldn't create big burdens for our team.

The Appeal of Social Media

As we evaluated our options, one of the first places we looked was social media. Whatever your opinion of social media, it is hard to ignore the fact that scientists are using

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it—a lot. There are ongoing discussions about whether social media benefits outcome metrics (e.g., citations), but there is a universal consensus that it adds value to an overall scientific communication strategy. At the most basic level, studies suggest it increases discoverability by people outside of a researcher's smaller scientific circle (e.g., Côté and Darling¹). Scientists are already going to social media to promote their research, so it seemed logical for us to go to where scientists are already engaging and simply join them there. And it wasn't much strain on our workflow. Editors processing articles for publication are getting into the weeds of the papers anyway, so asking them to pull out one compelling sentence that would make a nice social media post did not create a large workflow hurdle to jump. We made the decision to launch a social media campaign targeting Twitter and LinkedIn, our association's 2 most-used platforms.

Evaluating the Impact

In late 2019 when we discussed this project, AWWA *Water Science* had already accepted and published dozens of articles. Much of the content had been online for several months without any promotion outside of our standard email to membership containing the table of contents. As a start, we contacted all the corresponding authors with a template email informing them of our plan and asking them to submit any social media handles if they had them. Then, our editorial team sat down with the association's marketing department to discuss the concept of a tweet as some members of our team didn't have much experience with social media. We

reviewed the various elements of a tweet: what makes a good tweet, best practices and things to avoid, and how we would efficiently capture tweet information as part of our workflow. Once we were all on the same page, we divided up the published articles and started the task of composing tweets for our backlog. When that was finished, we assembled them and handed them off to our association's marketing team. Our association had a brief discussion about whether we should create a new Twitter handle for our new journal or simply use the association's Twitter account (@awwa). In the end, we opted to use our association's handle—the principal reason being that our association's accounts already had tens of thousands of followers, so there wouldn't be a need to build a social media following from scratch, which can be a very difficult task. Also, it allowed us to put important research findings in plain English in front of a large community of people who care about water. Our marketing team set up a schedule for our content to be included in the association's social media calendar. Then we waited.

We wanted to evaluate the success of the campaign to know that this work paid off and that we were, in fact, driving readers to our content. After the bulk of the tweets went out, we examined the cumulative page view of the articles so we could characterize—in a qualitative and descriptive way—what happened after an article was published and after it was featured on social media. Then, we took a deeper dive into the data for these articles to quantitatively evaluate the success or failure of the tweet campaign. We did this by comparing total article page views for 30 days before and 30 days after a social media post.

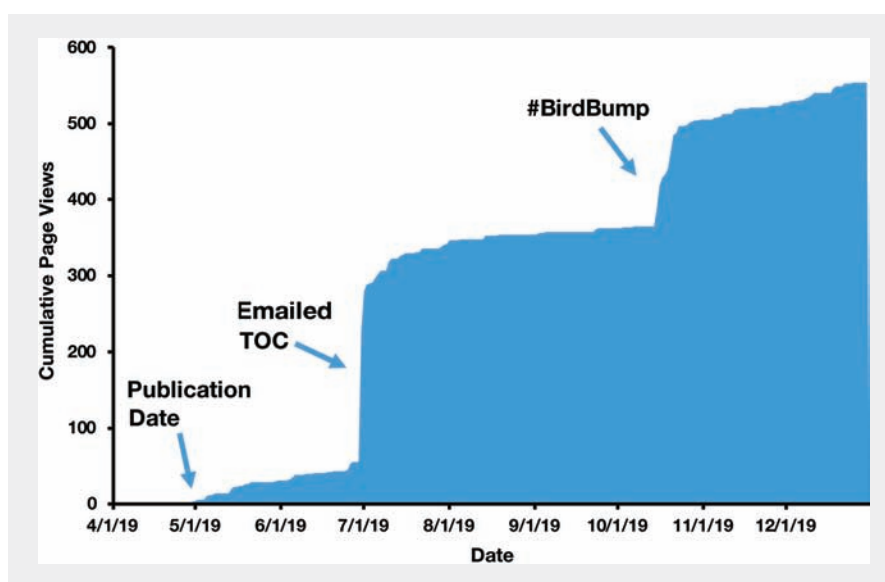


Figure 1. Cumulative page views over the year 2019 for one of the articles published in *AWWA Water Science*. For this example article, the day the online table of contents was sent to our membership is labeled as “Emailed TOC” and the day we posted the article on our social media is labeled as “#BirdBump.”

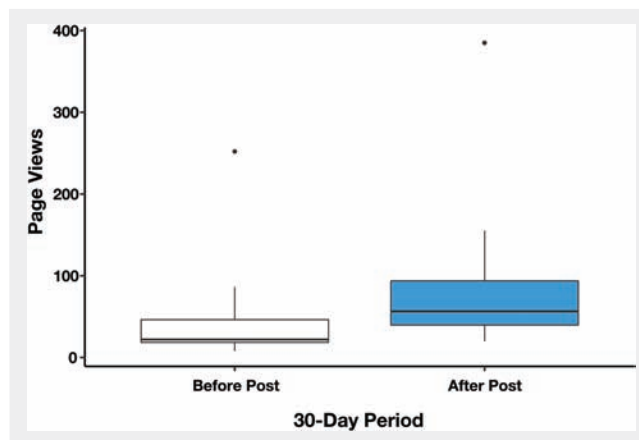


Figure 2. Comparison of page views 30 days before and 30 days after a social media post ($n = 20$ articles). Article traffic was significantly higher for the 30-day period following a social media post (repeated measures ANOVA: $P < 0.005$).

The #BirdBump

When we looked at the article traffic in a qualitative way, a general trend in page views emerged. Figure 1 shows article traffic for one of the articles we analyzed, and this pattern is consistent with the general trend. When an article was first published, page views were relatively low. In Figure 1, note that for the first 2 months of this article's life, there were fewer than 100 views. When the issue closed and we distributed the electronic table of contents to our membership, we saw a large spike in page views. However, that traffic did not continue; it plateaued. When the scheduled social media posts hit our association's platforms (Twitter and LinkedIn), we saw another smaller spike in article page views (see #BirdBump in Figure 1, which is a neologism for the increase [bump] in traffic that corresponds with the day we posted on social media), and a small growth in the rate of cumulative page views after that.

At the time we examined this, there were 20 articles that were published, announced in an online table of contents, and had a social media post with enough time for analysis, so we used these articles to quantitatively examine the impact of the campaign. Results suggested that the social

media posts led to a significant increase in article traffic to content pages on the journal website (Figure 2). On average, articles experienced about 250% more traffic in the month following a social media post (i.e., a bump from the previous page-view plateau). While all articles had social media engagement, there were varying amounts of interactions. Some articles experienced marginal increases in page views (in fact, one had fewer views after the tweet), but others saw engagement grow by around 1000%.

The Takeaway

While results varied—likely because of differing marketing strategies, author participation, unrelated web traffic, and general interest in the topic—we determined that posting articles on social media had a positive effect and was worth the marginal addition to our workload. Our results suggested that posting an article on our social media platform reached a different audience that wasn't organically discovering the research, didn't receive the email with the table of contents, or simply didn't look at our other communication efforts. Clearly, this will be different for every title and every publisher (our journal is published by a member association with an in-house social media team and a sizable online following). Our strategy may not apply to other publications, and it is very important for editorial offices to evaluate what tools are right for them.

The field of publishing is exciting. There are a lot of innovations and new ideas, but when it comes to incorporating them, it is important to determine the following: 1) whether you have the capacity to execute them well and 2) whether they are truly addressing a problem by using an evidence-based approach. Using this sort of data-driven examination, it becomes easier to allocate limited resources in a way that is effective and efficient.

Note: TWITTER, TWEET, RETWEET, and the Twitter logo are trademarks of Twitter, Inc. or its affiliates.

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Jasmine Wallace: Mastering the Art and Science of Peer Review

Jonathan Schultz

High-quality peer review rarely happens spontaneously. It takes a skilled and knowledgeable staff to keep the peer review process moving along in a way that is fair and equitable to all researchers while ensuring that only the best science advances to publication. For the American Society for Microbiology journals, that process is managed by Jasmine Wallace, who brings a love of scientific publishing and a passion for communication to peer review. In August, Jasmine and I spoke about the opportunities in the future for peer review and publishing, the attributes and skills she thinks are essential for success, and her role in developing a new podcast for CSE.

Science Editor: Tell me about your job and organization.

Jasmine Wallace: I'm a peer review manager at the American Society for Microbiology, which means in layman's terms that I'm responsible for ensuring that the peer review practices and the policies are up to date and applied consistently across all of our peer-reviewed scientific journals. It also incorporates a bit of analyzing and identifying measures to improve, for example, speed and efficiency for reviewers, editors, and authors. I'm also constantly having to make sure that everyone is aware of any new tools, workflows, or policies surrounding peer review and making sure that everyone is on the same page about what that means. I do a ton of analyzing and monitoring statistical metrics on submissions, acceptance rates, turn times, and so on. Now we're additionally adding things to help us increase diversity within our organization; we're taking a look at our reviewer boards and our editorial board. The American Society for Microbiology is a medium-sized society publisher, but the society has over 30,000 members, including researchers, educators, health professionals, and more. We're actually one of the largest life science societies in the world and I think that's a pretty cool thing to be part of.

Science Editor: I saw some of your journals cover virology so I imagine this has been busy year for you.

JONATHAN SCHULTZ is Editor-in-Chief, *Science Editor*, and Director, Journal Operations, American Heart Association.



Jasmine: Yes, there's a ton going on right now. Our workloads have increased so much. We have initiatives within our organization that are working on with the White House Coronavirus Task Force and other initiatives. Our scientists are so strained right now. We have tons of members who are clinicians, so they're in these labs. We had quite a few editors that actually contracted the virus and then they're writing about it. It's interesting in the greater scheme of things, but when you're doing the work behind it, it's just managing a lot of different... adjustments to our workflows. We've had to do things like extend deadlines, almost indefinitely right now. Everyone agrees turnaround times are important, but right now they're not as important. Having to make those adjustment is a lot for us, but I think it's necessary. It shows our members that we're listening to them and we're catering to their needs. It just makes me feel good that we are listening to them in a time where they really need us.

Science Editor: At my journals, we've told all our editors that this year is going to have a giant asterisk next to all the stats.

Jasmine: Yeah. We are actually seeing an increase in submissions. We do have a journal on virology and one on clinical microbiology, which is also getting a large influx of

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papers, with the clinicians writing about all their experiences. So yeah, I guess we need some asterisks, because it's just going to be crazy.

Science Editor: How did you get involved in editing and peer review?

Jasmine: I actually did it by choice, which I think is unusual for publishing only because most people stumble into it, which I think is weird for most professions. But I made the decision to do it. I graduated from undergrad with an English degree and wanting to do something with my degree. I landed my first job at an organization called Health Affairs, a medical journal. It was very entry-level: I was an editorial assistant, but I don't think that was what my title was officially. And I just started loving what I was seeing everyone doing, loving the processes, and really wanting to get more engaged in what publishing meant and what kind of careers were available. Prior to coming into this space, I only knew what a copy editor was and honestly, looking back, I didn't even really understand what they did. But I knew that I wanted to do writing and editing. Once I started really enjoying the things that I learned, I decided to go to grad school to really solidify myself. That was one of the major things that I think helped propel me to this next level, because it taught me about everything that I didn't know within the scientific publishing world, and kind of quickly.

Science Editor: Where did you get your Master's degree?

Jasmine: George Washington University. They have a wonderful publishing program. I think that it's one of only a few programs in the nation. It was fairly new; I was cohort 8 and I think they're now up to 16, or so.

Science Editor: It sounds like it was a valuable experience for you.

Jasmine: Very, very valuable. It led to a ton of networking opportunities. I met some of my closest acquaintances and mentors and that's led to a lot of other opportunities.

Science Editor: Now that you've kind of gone through all that, how do you describe what you do to somebody who doesn't know, basically someone like yourself from a couple of years ago when you didn't really know what scientific editing and publishing was?

Jasmine: What I do is first see what their overall knowledge of publishing is. I think about my family, and they still don't know what I do, so I don't know if I'm describing it well. I usually step back and I ask, do you know what a journal is? So I manage that process. I manage that from beginning to end; the research is evaluated and moving through this process quickly. Then it is published and can be found by other researchers. I've tried to go at it from that angle. And usually they get it at that point. A lot of people think publishing and they think, oh, magazine or book. And it's like, no, it's something a little bit different. I think everyone's familiar with research findings, so that's a good place to start. I did a career day once at an elementary school and that's what forced me to know how to break this down to the minute detail.

Science Editor: Your title is Peer Review Manager, which I think is interesting because not every organization has staff that get to focus only on that part. How do you keep yourself kind of informed about what's going on in peer review, especially this year where there's a lot changing, a lot that's being questioned.

Jasmine: I read a lot. I read more than I do anything else. I follow a lot of different blogs and read a lot of articles. People kind of know that about me, so they'll send things to me that I'm not familiar with or haven't heard about just yet. I also attend a lot of conferences. I make a lot of connections because I think sometimes it's easier to ask your friend what's going on in their area versus just reading about something. And I ask a lot of questions. I also sit in a lot of meetings to try to see how peer review fits into other areas, because just as peer review is changing, other areas such as production are moving too. It's usually pretty segmented but we can learn from each other. Production is focusing on, for example, introducing artificial intelligence and automating their workflow and there may be ways we can bring some of that into peer review.

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Science Editor: What skills, abilities, and personal attributes have you found to be essential to success in your position?

Jasmine: I was asked something similar at a career panel recently, except there was one slight difference: What are the skills that you think are essential, but additionally, how are they transferable to different career paths? I say that because I think that all skills should be transferable because of how much change we're experiencing. It should be a skill that can move with you and grow with you, so those are the types of skills and personal attributes that I love to highlight.

The first is vulnerability. It's something that I continuously strive to achieve within myself and within my workplace, because it's hard to feel "dumb" or to feel like you can't ask or answer a question. You miss opportunities when you don't allow yourself to say, "Okay, I'm going to take this moment to say: I don't know, I need some help." I think that's a skill that you definitely need in this space. Again, we talked about how I am staying abreast of knowledge: I'm asking people, I'm using that skill of vulnerability to put myself out there. And I guess on some level it's more like a personal attribute, but I consider it a critical skill because you can develop it.

The other thing I think about is time management, and [laughs] it's something that I struggle with still. I read as many books as I can to try to get as good at it as I can. I have my planner beside me when I'm making any decisions, because there was a point where I was really struggling to manage my time. Especially in publishing, I find that we have to juggle a lot. Because of these professional silos, you have to volunteer in some capacity to learn more about what even the person next to you is doing and that requires you give your time to an industry organization like CSE.

And to balance all of that, without feeling overwhelmed, you need to master how you get everything done and strive to get there. I'm still learning as I go: I didn't even have a real planner for 2 years. I think we're going to all be asked to do more things, so time management is a critical skill.

The last skill I want to mention is communication. Oral, written, verbal: all types of communication are really critical to master. In editing and publishing, you don't always have to talk to people, but you have to be able to communicate because we're working with an author's form of communication in journal articles. It seems like it should come naturally, but it's a skill you have to craft: Even if you're writing emails or editing every day that doesn't make you an exceptional communicator. Learning how to communicate is only going to become more critical.

Science Editor: Speaking of communication, how are you staying connected with coworkers and other colleagues these days?

Jasmine: I'm still doing the standard things: phone, email, LinkedIn, Twitter, happy hours, lunch, Zoom. Well, Zoom is facilitating almost all of that anyway. It's forcing me to be more aggressive with my communication because before you had those moments where you're passing by and can stop and chat. Now you must be more intentional, and because of that, I'm probably having more valuable conversations now. When we have these virtual conferences, we wrestle with how different are they from in-person conferences, but there can be benefits if you're a person like me who has been described as an ambivert, but leans introvert. I'm okay with doing it, but I'm not one to naturally start a conversation. I think right now is a time where introverts can reign because we don't have to deal with those uncomfortable starts: Walking up to someone isn't the same as sending someone a message or an email. I like networking in a virtual space a lot more than I do standing around, talking, and feeling awkward.

Science Editor: I want to ask about the CSE podcast you are starting with Carolyn DeCourt, specifically how you envision it and what you want CSE members to know about it?

Jasmine: The podcast we are starting through the Professional Development Committee at CSE is called SPEAK: Scientific Publishing Exchange Around Knowledge. I love acronyms and SPEAK is so much easier to say. The name is from the core of the CSE mission. The idea behind the podcast is to have conversations, professionals to professionals, about everyday operational matters—things that are happening in the workplace. Not just high-level industry initiatives and developments, but more into the grit of things: What are you doing? What are you seeing? How is it transforming what you have to do? What needs to happen? We want to give a space to have those types of conversations. If we have a request of the CSE membership, it would be to reach out: if you think that you have something that is worthy of being talked about and that someone else may want to know. Or things that you have questions about. We can get it out there so that people are aware of what issues you're dealing with in the publishing workplace. And not just any workplace; I think that is critical. If you are, say, a copy editor or a production editor, and you want to talk about some new efficiencies that are happening, this can be a place to share that, but not as involved as a full session at a conference. We want to create a unique space where we can better connect and share that body of knowledge with each other. Usually, we focus on experts, which is great (I love experts) and we don't want to exclude them, but we want to make people feel more comfortable and more included in these conversations even if they feel uncomfortable calling themselves an expert. So members, if you're out there and you want to see this happen, contact us. We envision this being led by members and I would love to see people first

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listen, tell us what you think about it, and feel free to join the conversation.

Science Editor: What do you see as some of the biggest changes that are happening in the industry?

Jasmine: Right now, COVID-19 is taking over everything because it's forcing us to make even larger scale changes that we otherwise wouldn't even begin to approach. It's pushing peer review to the max. I absolutely love that. I love challenges: Every day there's a new challenge or something that we must figure out and work around or adjust. It's forcing us to evolve into the next level. Where I think this is going is towards more open science and open research. What that means to the publisher is understanding that we're going to have to be a bit more collaborative and we're going to have to release some of the power that we think we have in order to allow for more collaboration. I can see growing partnerships between organizations that may seem like they have no reason to have a partnership but are going to have to connect a bit more. I love that because when you get more people at the table and more collaboration happening, you have so much more growth. And I also think it gives us a really good opportunity as publishers to take back our power. I like to say it like that because I think we struggle with showing people the value of what we do, and I think this has given us more opportunity to add value in a different way if we allow ourselves to embrace that change and open ourselves up.

Science Editor: What's something surprising about yourself that that our readers might be interested in knowing?

Jasmine: I am an artist. I paint. I took painting up in college and I recently decided to share my art at the urging

of my family. I signed up for this really cool art gallery that's going to be virtual this year, of course, but any level of artist can display any type of art that they want. A lot of people are surprised to know that I paint and know so much about painting. I studied abroad in Italy. I took up sculpting in an Italian sculptor studio and worked there for an entire semester. While there, I traveled all over the area to go to different art museums, to see different things that I just longed to see. I almost feel awkward calling myself an artist, but I do because I do paint and I love it. I'm talking to you from my art studio, which has now become my office.

Science Editor: As we wrap this interview up, is there anything you want to share with our readers that we didn't already cover?

Jasmine: I have found that I like what I do for a living. I really like understanding how research funding works, how things get funded, how things get studied. I'm also a cyclist, so I'm looking into starting an organization or a nonprofit where you take the 2 things that I love and merge them together into a bike ride to raise funding for underrepresented minority groups' research in mental health. When you don't study it, it doesn't get studied. That seems very simple, but I didn't realize how much went into understanding research, how to get funding for things, how some things never get funded so it never gets researched. I think of this as a good opportunity for me to bring all that I've learned and done professionally into my passions. I want to encourage people to try to find some similarities that you may not have thought were there at first between what you do and what you love to do.

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Keynote Address: Improving Openness and Reproducibility in Scholarly Communication

SPEAKER:

Brian Nosek

Executive Director
Center for Open Science
Charlottesville, Virginia

REPORTER:

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"I am delighted to *not* be with you all today!"

The smile on Brian Nosek's face revealed the irony behind his opening quip. Speaking from his home office in Charlottesville, Dr Nosek was about to deliver the Keynote Address for the first-ever virtual annual meeting in CSE's history, which was commencing at the outset of the COVID-19 pandemic. The inference of his remark, of course, was that his delight was inextricably entwined with his support of CSE's effort to stem the spread of coronavirus by adapting to the "new normal" of virtual gatherings.

The COVID-19 pandemic has forced professionals, organizations, and institutions of every sphere not only to envision new ways of accomplishing their goals, but also to reexamine the origin and even the integrity of those goals. In that sense, Nosek's address had a fortuitous sense of pertinence about it. As Executive Director of the Center for Open Science, one of his primary missions is to close the gap between the altruistic tenets of the scientific process and the real-world research practices that are in disharmony with those tenets. Not unlike the voids created by the COVID-19 crisis, Nosek sees this gap between ideals and reality as an opportunity to institute behavioral changes within the scientific research culture by reinforcing the core values that the scientific community purports to uphold. The question, he said, is: "How [can we] get researchers to live closer to the values that they possess—or that we collectively possess—for how science operates?"

To seek the answer, we must first understand what those values are. While acknowledging that there are several ways to define them, Nosek cited the Mertonian norms as a foundation. In the mid-twentieth century, world-renowned sociologist Robert Merton identified 4 key principles that are unique to the scientific enterprise: communality (the open sharing of information), universalism (merit-based evaluation of research), disinterestedness (selfless motivation), and organized skepticism (acceptance of critical scrutiny). Yet several "counternorms" that have taken hold in the real



world are at odds with these ideals. A survey published by Anderson et al¹ in 2007 revealed that while a substantial majority of scientists in the United States say they both endorse and abide by principles that emulate the Mertonian norms, an equally substantial majority perceive that the scientific research community as a whole routinely abandons those principles in favor of the counternorms. Nosek offered a sobering explanation for this paradoxical result: The incentives for success in science have become rooted in the pursuit of publication rather than the pursuit of knowledge.

It makes sense, sociologically speaking. When he first embarked upon a career in the sciences, Nosek learned early on that certain behaviors are rewarded more than others, and that publication is the ultimate reward. Studies that yield negative results, exceptions, and inexplicable outcomes are less likely to be published than those that report neatly packaged, novel results that fulfill the study objectives. What is more, publication leads to the next job, the next grant, and the next step in career advancement; yet Nosek asserted that these incentives often lead to science that is not as accurate as it ought to be, regardless of the researchers' intent. That said, he acknowledged that researchers generally have good intentions, and that those intentions can be safeguarded by transforming the current incentives into ones that promote transparency, reproducibility, and the credibility of evidence.

Returning to the Mertonian norms requires a substantial shift in the overall culture of scientific research, and

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changing the incentives is just one of several means toward such an ambitious end. According to Nosek, normative change and policy change are also critical parts of the formula, particularly in the “highly decentralized” world of scientific research. Yet, in order to effect such changes, researchers need to be provided with tools that can be integrated seamlessly into their daily workflows to minimize inconvenience and promote compliance. Nosek cited three such tools, one for each category of change, that are being implemented throughout the scientific community.

Observing that “the easiest kind of intervention is [one] that tries to promote visibility,” Nosek noted that several journals now reward authors with badges simply for complying with requests for transparency (see e.g., <http://cos.io/badges>).² These are not actual badges, of course—they’re printed icons stamped on journal articles. Nonetheless, this is an example of a normative change that has a fundamental appeal and signals a desirable behavior to the scientific community, thus increasing the chances that it will become commonplace. In the category of incentive change, the registered reports model—in which peer review occurs after the study design phase in exchange for guaranteed publication, regardless of outcome—shifts authors’ incentives from publishing exciting results to asking exciting questions by establishing a culture in which robust, sound study designs are valued over positive outcomes (for more, see <http://cos.io/rr/>).³ In this model, the incentives also change for reviewers, who can jettison their concerns about a study’s outcome and instead ask: “Do we need to know the answer to this question, and is this method a good way of asking it?” Finally, policy changes can drive the other 2 categories of change. The Transparency and Openness Promotion (TOP) guidelines (<http://cos.io/top/>),^{4,5} a set of stakeholder criteria promoting reproducibility and transparency within the scientific community, provide a policy framework for journals, funders, and institutions to guide the behaviors of their authors, grant recipients, and employees, respectively. In addition, these guidelines incorporate a system of rating journals (<http://topfactor.org/>)⁶ rather than ranking them, ultimately rewarding journals for the integrity of their processes rather than the outcomes they report.

These endeavors are taking root within the scientific community, and some are already having a discernable

impact. In 2014, the journal *Psychological Science* adopted the use of badges, and now 80% of *Psychological Science* articles bear badges indicating the open sharing of data. Registered reports are being cited frequently, despite the fact that they publish more negative results than articles that have been submitted via traditional workflows.^{7,8} Finally, more than 1000 journals have adopted the TOP guidelines, and all of the major publishers have expressed support for them as a viable set of guiding principles for the scientific process. It appears that the counternorms are being countered by new norms.

Despite these encouraging signs, Nosek conceded that the task at hand remains a daunting and unfinished one. “The challenge that we face for ultimate change of the research culture,” he said, “is that each researcher is embedded in an ecosystem of different incentives.” However, he also opined that “the best solution we have is sunlight.” And although his reference to the sun was steeped in the idea of transparency, this imagery had additional, richly woven layers: Not only did it evoke an essential, alimentary component of the aforementioned ecosystem, it also conveyed Nosek’s optimism about a bright future for the scientific research process—and indeed, the very integrity of the scientific enterprise.

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Project Management Fundamentals for the Editorial Office

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A thorough definition of project management by moderator Emma Shumeyko, Managing Editor at PNAS, launched the “Project Management Fundamentals for the Editorial Office” session. It served as an appropriate lead in to a session filled with project management tools provided by an experienced project manager, Jennifer Arndt from the ACS, and a case study of a project that could have been managed better if such tools had been implemented by ASCO’s Emilie Gunn. Questions from the attendees rounded out the hour-long session.

Shumeyko clearly expressed the definition of a project from the Project Management Institute as a temporary endeavor that is undertaken to create a unique product or service or to implement a significant change. She explained that projects differ from regular work because they have a distinct beginning and end. Examples of projects that may be encountered by an editorial office can be of a large scale, such as launching a new journal or selecting a new platform vendor. They can also be smaller projects such as adding a podcast to the journal’s offerings or implementing a new workflow for the journal.

Why is it important to the success of a project to implement project management? Shumeyko said, “By breaking down a project into different phases, you can better put it into perspective, and force yourselves to establish goals from a 10,000-foot view.”

By following the 5 standard phases of project management, an editorial office can have that important view of their project. She explained each of the phases (Figure 1) and the basic reasons behind why each phase is important. For example, she said the planning stage is crucial for successful projects because it causes planners to think beyond the obvious, including “How could it go

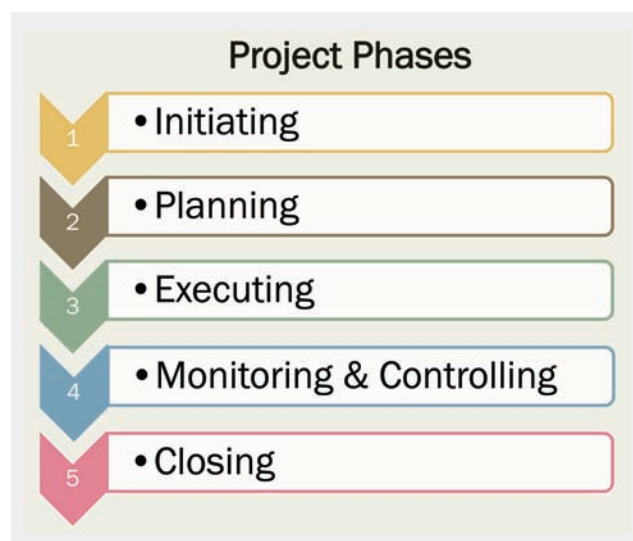


Figure 1. Five phases of project management.

off the rails and how would you course correct if it does,” Shumeyko said.

In launching her talk of a toolkit to use when managing a project, Arndt explained that project managers always keep in mind the Golden Triangle throughout the life of the project. She said, “If you change any aspect of these three elements—scope, time, and cost—the others will necessarily change as well.”

Each of the 5 tools within Arndt’s toolkit that she uses when managing projects are important in aiding her to manage change as it happens and to communicate with the team and all stakeholders. Her first tool to use for any project is to create a project site where all information related to a project is stored and is regularly updated so all stakeholders know what is going on with the project at any point. A key element of the site is developing a scope statement for the project, which is an explanation of what you are doing, why it is important to do it, what it is going to be accomplished, and what it is not going to be accomplished. She said it is important to have an exclusions section included in the scope. When stakeholders want to make changes over the course of the project, knowing what was purposefully not included in the original scope will enable you to better renegotiate when that happens because, “It is rare you can make a scope change without impacting those other aspects of the triangle,” Arndt said, referring to time and cost.

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Other important tools in her toolkit include: an activity plan, an action item log, a decision log, and a cost log. Arndt notes that project management is not a “one size fits all” endeavor and that not all tools need to be used, depending on the specific project or the company’s culture. She did she recently add the decision log to her toolkit because she learned over time that noting the decisions, who made them, in what context, and in what format they were made can help to save time when you are challenged or asked questions about how you arrived at where you are today. She said, “If you don’t record the decisions that are made all along the way, they end up getting revisited. The team can sometimes churn on this.”

Following the discussion of the tools one can use during project management, Gunn presented a case study of a change made at ASCO that had its fair number of challenges and missteps, which she thinks could have been avoided if they had used the tenets of project management prior to jumping in. The real-life project Gunn described was when the society chose to rename two of its journals to associate them more closely with their flagship journal. The changes were talked about for quite a while by society management, she said, but once a decision was made only a short email mandate to actualize the change was sent to some staff who should be involved—but not all.

The mandate delineated the specific results, the reason for the changes, and a deadline, but many of the finer details were not covered and thus proved challenging for the organization in implementing the name changes. In evaluating the problems encountered along the way, Gunn said much of it was due to little planning and no clear leader of the project, and that led to important details being missed in some situations and duplication of efforts in others. “There were so many little things that we just didn’t give a whole lot of thought to that led to people having some of the information but not all of it,” she said.

In conclusion, Gunn provided some sage advice about the process of project management not ending when the project ends. She said to be sure to celebrate and reflect when the project is completed. Taking time to note what went well and what did not go well will provide wisdom for future projects.

A virtual attendee helped end the session by asking if project management tools can be used in situations that do not necessarily meet the criteria of a project. Arndt responded that she does draw on her project management experiences and tools for regular operations work and to help keep staff on track but cautions against going too far when the situation doesn’t warrant it. She said, “I think you could take some elements of this and make it useful, but I think you really have to tailor it to the work.”

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Open Access and Plan S: An International Comparison

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The impetus for this informative and timely discussion on Plan S was the ABEC (Associação Brasileira de Editores Científicos) meeting in Brazil, where most journals are already Open Access (OA) and would not be affected as severely as other non-OA journals would be by the European move towards OA/Plan S. The persistent question is how other countries would address the potential implementation of Plan S. This session was developed to identify differences in potential Plan S implementation between the United States, South America, North America, Asia, and Europe. While the COVID-19 global pandemic has certainly slowed international participation, starting this conversation is critical.

The first speaker, Brittany Swett, discussed what editorial offices need to know now about Plan S. The publishing landscape ecosystem is complex and includes many participants—libraries, society publishers, authors, institutions, and commercial publishers—and, as such, publishing vendors, innovator/technology groups, non-profits and consultants all have a role to play in developing a plan. Swett stated, “The general disruption of the digital age, technology uses, and the speed of knowledge exchange have all caused a continual evolution in the landscape of sharing data.”

The scholarly publishing environment has undergone a transition, starting in the late 1990s when journal mergers and acquisitions dictated a new infrastructure for content dissemination. Add to the mix the emergence of digital data sharing and new technological workflow products and large publishers became more attractive to authors and societies struggling to compete with their services. That trend showed weakness moving into 2006: the smaller publisher share has increased and

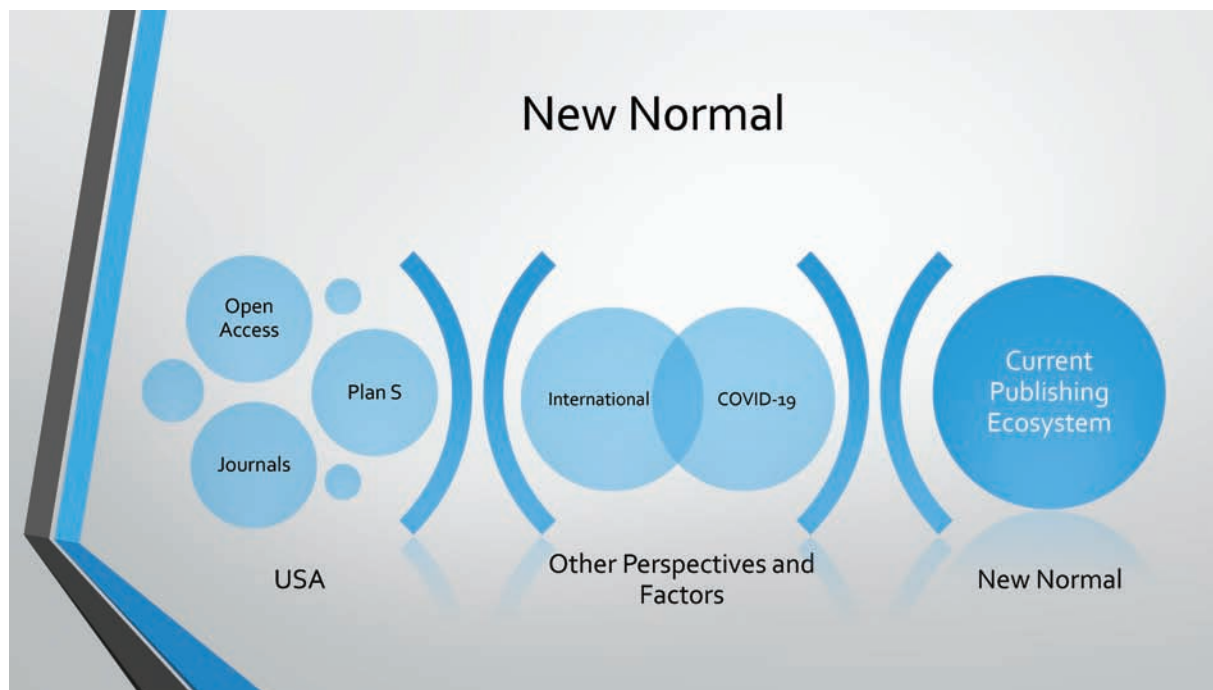
mega-journal share has decreased as authors demand more boutique services for their content sharing, such as full OA, low publication charges, rapid and nonselective peer review, and the ability to address subject matter with a broad scope. The OA philosophy has a large following that wants to use their content in perpetuity and does not want their IP behind a pay wall; thus, the appeal of Plan S.

COALITION S is the supporting body which believes no scholarly publication should be locked behind a paywall and content availability should be immediate and without embargoes. Research articles published and funded by Plan S organizations make up 7% of global publications and represent good research in high-impact journals typically managed by large publishing companies. Industry pushback has led to softening of initial Plan S requirements so that now there is no cap on Article Processing Charges (APCs). but publishers/journals need to be transparent about fees and use. Transformative Agreements offer a way for traditional subscription-based journals to have time to transition to fully OA. The tradeoff is that typically this will mean less favorable contract terms and less royalty to a society.

Margaret Perkins of the *New England Journal of Medicine* (NEJM) was the second speaker and discussed how her organization is implementing a data sharing policy. She said, “It is unclear how many of our authors are aware of OA; but recent survey results showed that 72% of authors who are said they’d continue to submit as often as now and it is not yet apparent that OA is a factor for our authors.” Still a subscription-based journal, NEJM offers free access to research articles through weekly online publication and immediate access to public health articles, particularly important during this pandemic. Perkins states that “Our COVID content includes all different types of content, videos, and interactive programs with expedited processing. We have seen a 500% increase in submissions largely, we think, because all COVID content is freely open and immediate.”

Both speakers agreed that COVID has slowed the Plan S initiative but that organizations should take this time to evaluate their content for availability and scope, work to facilitate data sharing, and develop what they think is the best approach to accommodate OA mandates for them, their authors, and readership.

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Resources from the Session: Open Access and Plan S—An International Comparison

Resources—Brazil

- <https://www.coalition-s.org/sao-paulo-statement-on-open-access/>
- https://www.researchgate.net/publication/30864934_Brazilian_open_access_initiatives_key_strategies_and_challenges
- <https://www.coalition-s.org/wp-content/uploads/Sao-Paulo-Statement-OA-01052019.pdf>

Resources—Organizations

- https://covid19-trials.com/?utm_source=Newsletter&utm_medium=email&utm_content=News%253A+Global+COVID-19+Clinical+Trial+Tracker+launched+by+Cytel&utm_campaign=Cytel_COVID+Trial+Tracker+MAIN+Release

- <http://hopkinshumanitarianhealth.org/empower/advocacy/covid-19/covid-19-children-and-nutrition/>
- <https://www.acs.org/content/acs/en/covid-19.html>
- <https://theacse.com/>
- <https://www.asianeditor.org/>
- <https://ease.org.uk/>
- <http://www.wame.org/>

Resources—COVID-19

- <https://www.sciencemag.org/news/2019/01/will-world-embrace-plan-s-radical-proposal-mandate-open-access-science-papers#>
- <https://www.coalition-s.org/addendum-to-the-coalition-s-guidance-on-the-implementation-of-plan-s/>
- <https://twitter.com/lisalibrarian/status/1248310914471821312>
- <https://oaspa.org/statements/>
- <https://www.stm-assoc.org/about-the-industry/coronavirus-2019-ncov/>
- <https://wellcome.ac.uk/coronavirus-covid-19/open-data>

Inclusive Language: Race and Ethnicity

Stacy L Christiansen

Among the many responsibilities that fall to editors, one of the most important is encouraging authors to make thoughtful and sensitive language choices. This includes using patient-first language (patients with diabetes, not diabetics); language respecting the age, sexual orientation, socioeconomic status, and disability status of groups or individuals (when relevant); and language that avoids bias regarding race and ethnicity.

In reports of scientific research, specifying the race and/or ethnicity of participants can provide information about the generalizability of the results of a specific study. Because many people may have mixed heritage, a racial or ethnic distinction should not be considered absolute, and preferably it should be based on a person's self-designation. Ideally, researchers should be required to provide an explanation of who classified individuals' race or ethnicity, the classifications used, and whether the classifications were defined by the investigator or the participant. In addition, the reasons that race or ethnicity information was collected in the study also should be described (e.g., in the Methods section).¹

Updating the Language: Black and White

The committee members responsible for the *AMA Manual of Style* received a number of queries earlier this year about the presentation of racial and ethnic terms, in particular (but not exclusive to) the manual's style preference of the lowercase *black*. The 11th edition originally specified capitalizing racial and ethnic terms that derive from geographic nouns such as Asian, Alaska Native, and Latina, but the terms *black* and *white* were lowercased as racial designators (i.e., not derived from proper nouns).

However, recent and ongoing events spurred us to reconsider this style recommendation. The manual's committee met several times, conducted research, and sought input from multiple sources. We deemed this issue too important to wait for the next formal edition.

In weighing the options (keep *black* and *white* lowercase, capitalize just *Black*, or capitalize both *Black* and *White*), we

looked to usage in a variety of places, including other style manuals (*Chicago Manual of Style*,² APA style,³ and the *AP Stylebook*⁴), writing by an array of scholars, and guidance on diversity from academic and government sources.⁵

We concluded that the best course of action would be to capitalize both *Black* and *White*, which aligns with the capitalization preference applied to other racial/ethnic categories.⁶ We acknowledge that there may be instances in which a particular context merits exceptions to this guidance, for example, in cases in which capitalization could be perceived as inflammatory, divisive, or otherwise inappropriate.

The Need for Precise and Updated Language

There are additional language issues the committee is weighing, including "other" as a category and racial and ethnic terms used as nouns. The nonspecific "other" is sometimes used for comparison in data analysis but may also be a "convenience" grouping and should be avoided when possible. It is important to be specific when reporting on racial or ethnic differences (even if these comprise a small percentage of participants).

The study included 200 White individuals, 100 Black individuals, and 100 of other race/ethnicity.

In the above situation, the editor should press the author for further explanation, considering that the racial or ethnic background of a quarter of the study is unknown. Furthermore, it is oversimplifying, potentially misleading, and possibly pejorative to define a group of people by what they are not. Avoid using "non-White" as a category label for the same reason (which can be interpreted as one category being a standard and one being "other" or nonstandard).

The study included 200 White individuals, 100 Black individuals, 75 Asian individuals, and 25 who indicated more than 1 race.

It would be ideal, in the above example, to have more granular information, such as the country of origin of Asian individuals. But often authors can only report what was collected in baseline demographic data.

Note that herein the racial and ethnic terms used are all adjectival; in the interests of person-centered language

STACY L CHRISTIANSEN, MA, Managing Editor, JAMA, and Chair, AMA Manual of Style committee.

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it is best to avoid labeling a person with a classification (Blacks, Whites) just as we avoid calling people asthmatics or diabetics.

This is also why the word *minority*, on its own, can be pejorative and vague. Terms that might be substituted—depending on context—include *racial/ethnic minority group*, *underrepresented group*, or *people of color*.

In addition, the AMA Manual committee is working on a further update to the Inclusive Language section to address other racial and ethnic terms, such as *Latinx*. Because *Latinx* and *Hispanic* have different meanings,³ it is best to be as specific as possible and not simply choose one or replace one with the other. *Latino/a/x* may be the preferred terms for those originating from Latin America,⁴ although it is preferable to be as precise as possible (e.g., “participants were from Argentina and Bolivia” instead of “participants were Latino”). *Hispanic* is often used as an umbrella term for people from (or whose ancestors were from) a nation primarily of Spanish speakers, such as Cuba or Mexico. Again, the more precise language that can be used, the better.

Another term that has emerged is *brown*, which has been used to describe people not classified into Black or White categories. Use of *brown* is controversial because it has been used inconsistently and does not characterize a specific racial or ethnic category.⁴ For this reason, the AMA

Manual will likely discourage the use of *brown* in research reports in favor of more precise descriptors, but it may be a useful term in narrative or opinion pieces.

As evidenced by perpetual updates to style manuals, dictionaries, and other resources, nomenclature is never a static enterprise. Those of us in the business of communication have a responsibility to use and promote clear and accurate language, with words that reflect the world around us.

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Scientific Style and Format Update: Capitalize Racial and Ethnic Group Designations

As editors and publishers, most of us understand that preparing and publishing an updated edition of a book is a multi-year undertaking. In the case of style manuals and other reference titles, 7 to 10 years is a typical interval between editions. Even in the most mundane times, an awful lot can change in the better part of a decade. And as we know all too well, the current climate can hardly be described as mundane.

To date, CSE's practice with respect to *Scientific Style and Format* has been not to introduce changes to its rules and recommendations between editions. When the 8th edition was published in 2014, however, an online edition was introduced. The Introduction to the 8th edition noted that "The *Scientific Style and Format 8th Edition* Subcommittee worked to ensure the continued integrity of the CSE style and to provide a progressively up-to-date resource for our valued users, which will be adjusted as needed on the website."

And so we find ourselves 6 years later, with a call to be—and, fortunately, a platform that allows us to be—"progressively up-to-date."

In light of recent events and in keeping with announcements and changes made in a number of other

style manuals, including the *Chicago Manual of Style*, the *AMA Manual of Style*, *APA Style*, and the *AP Stylebook*, an Editor's Note will be incorporated into the online version of *Scientific Style and Format 8th Edition* (SSF8) advising that editors should capitalize designations based on color or local usage, including "Black," "White," "Indigenous," and "Highlander."

The updated guidance described above will be more fully incorporated upon publication of the 9th edition, expected in 2022. As part of the SSF9 Task Force's work, we expect that the Manual's more general guidance on bias-free language will be refined as well, in alignment with CSE's commitment to fostering an open and welcoming global community. CSE and the SSF9 Task Force welcome and appreciate feedback from our members and the editing community at large as we continue to improve our resources in the spirit of equality and inclusion.

October 20, 2020
Council of Science Editors
Board of Directors, 2020-2021

See: <http://www.councilscienceeditors.org/wp-content/uploads/Changes-to-SSF8-Style-Recommendations-10.20.20.pdf>

No Mo' FOMO: Using Social Media to Avoid Missing that Conference after All

Jennifer Regala

FOMO. I learned this one from my kids. It stands for “fear of missing out.” As a scholarly publishing professional, I do love me a good acronym. This one is particularly apt when it comes to describing that nagging feeling that plagues all of us. We all have our favorite conferences and meetings: CSE’s Annual Meeting, the Society for Scholarly Publishing’s Annual Meeting, the annual and section meetings of our own societies, regional industry happy hours, vendor-sponsored user groups, and the list goes on. In a non-COVID year, it is impossible to attend every meeting I want to go to. There are travel budgets, my job duties, my family, and other responsibilities to consider. I’m forced to evaluate very carefully which meetings I will attend and why.

Now, since March of 2020, we all have the opposite problem. Suddenly working from home 100% of the time. Because travel is out of the question, I am faced with a different dilemma. Budget is no longer as much of an issue—many conferences are free or greatly reduced in price. The most knowledgeable and renowned scholarly publishing speakers are suddenly tantalizingly within my reach. In theory, I could attend exponentially more conferences than I ever have before. But... I just don’t. Like all of you, I work really hard all day and spend a lot of time on GoToMeetings, Zoom, Microsoft Teams, Google Meet, you name it. The rest of the time I am staring at my screen and trying to make deadlines. Plus add my new role as a virtual learning facilitator for my children, and I just don’t have it in me to take advantage of this sudden accessibility.

Let’s talk about accessibility for a minute. One of those “silver linings” in these “unprecedented times” (groan, I’m ready for some good old-fashioned precededented times!) is that conferences and meetings not everyone could attend are now in reach for anyone with an Internet connection. However, have we truly attained accessibility to the amazing resources that these meetings present? I don’t think so. We only have so much bandwidth and time in the day while

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Attendees of the scholarly publishing happy hour in Washington, DC, April 2019. From left to right: Ryan Farrell, John Long, Violaine Iglesias, Jennifer Regala, Jeff Lang.

corralling home life and demanding jobs to add any more commitments to our schedules. It’s still important for us to keep up with industry trends and education, though, so how can we make that happen?

That is where social media becomes important. I first realized the brilliance of the conference tweetorial (one of my American Urological Association colleagues, Taylor Titus, introduced me to this clever term) in January of 2019. Most of you will remember that our biggest pre-pandemic disruption in the world of scholarly publishing was Plan S. At the APE Conference in Berlin, Robert-Jan Smits, formerly the Special Envoy of the European Commission for Open Access and Innovation, European Strategy Centre, and a mastermind of cOAlition S, addressed the audience with a keynote speech, “Plan S: Accelerating the Transition to Full and Immediate Open Access by 2020.” I did not have the budget or the flexibility with my family to travel all the way to Germany, but I did discover the power of the live tweet. I will never forget following along as conference attendees typed, in real time, the message that Smits delivered, the questions he was asked, and the mood of the room. I remember feeling relief from those tweets after spending much of fall 2018 in a lather about how to handle the Open

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Anna Jester @anna_jester · 9/21/20 ✓

Manuscript Review CME Participation has increased 🙌 and claim processes has evolved notes Kim Mackey from @AACR during #PeerRevWeek20 @CScienceEditors webinar

Graphical Overview of Participation, AACR

Manuscript Review CME at AACR

Year	Participants/ Reviewed Manuscripts	Certificates/ Reviewed Manuscripts
2012	0.16	0.25
2013	0.16	0.26
2014	0.15	0.25
2015	0.14	0.24
2016	0.13	0.22
2017	0.15	0.25
2018	0.20	0.33
2019	0.28	0.44

SurveyMonkey implementation

Participation was consistent from 2012-2017 and increased in 2018 and 2019 when we started using a SurveyMonkey CME claim form (versus email).

Live tweeting during Peer Review Week, 2020.

Access changes as laid out in Plan S. The people in that room were able to communicate to me, reading from my phone, that Plan S perhaps was not as much of an immediate threat as many believed. I will never forget how those tweets made me feel *included* in the meeting.

Once I had that taste of live tweeting done well, I couldn't get enough. Whenever I cannot make a meeting, I follow conference hashtags closely. And when I can make meetings, I make sure to repay the favor as best as I can. I take photos of speakers and slides, I quote important pieces of the presentation, and I summarize main points. This live tweeting has had the side benefit of forcing me to pay attention and focus on what speakers are saying. I find I get so much more out of a talk when I am capturing its message from tweets. Plus, it's a great way to meet and network with other people! I have continued following tweets from others or live tweeting myself during this time of virtual conferences, too.

It is important to remember these important tips, whether you're attending the conference or live tweeting it:

- Before the conference or meeting starts, check to see what its hashtag is. Always use this hashtag in your tweets if you attend the meeting or search the hashtag if you're following along.
- If you are live tweeting, be sure that the meeting and/or its speakers will allow you to share their content. This one is important!
- If you are attending or live tweeting, pay attention to what everyone else is saying, too. Feel free to correspond with other individuals whether you are there or not. You'll learn so much more from this organic interaction.
- Always be respectful. Even if you don't agree with certain opinions, it's always free to be nice and to comb your hair.

I am eager to hear from all of you. Follow me on Twitter @JenniferAREgala to talk more about how to get the most out of meetings using Twitter, social media topics you'd like to see me cover in the future, and anything else that's on your mind!

Recent Updates to the CSE White Paper

Jennifer Deyton, Patricia K Baskin, Erin McMullan, and Kelly A Hadsell

CSE's White Paper on Promoting Integrity in Scientific Journal Publications was first published in 2006, and the full document was updated in 2009 and again in 2012. In 2018, the CSE Editorial Policy Committee (EPC) began making updates on a rolling basis as new sections are added and/or existing sections are updated to reflect new information or best practices. This updated method for amending the document allows for more rapid dissemination of its contents so that they can be put in to practice in journal office operations as quickly as possible.

In this issue of *Science Editor*, the authors of this article aim to advise the readership of the most recent updates. We thank the members of the EPC (along with non-EPC members Carolyn deCourt, Darren Early, Monica Leigh, Megan McCarty, and Lindsey Struckmeyer) for their assistance with these updates.

The full CSE White Paper is available online at <https://www.councilscienceeditors.org/resource-library/editorial-policies/white-paper-on-publication-ethics/>.

2.1 Editor Roles and Responsibilities (Jennifer Deyton)

Editors fit into a unique role in the lifecycle of journal articles, acting as guides for the content and strategy as well as contributors to that content. They are integral to both to the strategy of the journal as a whole and the experience of authors, reviewers, and readers of the journal. They therefore have the responsibility to uphold the standards for that journal content and support the efforts of authors and reviewers. It is important to update the standards and ethical responsibilities for editors to ensure this process is confidential when needed, that editors know the expectations for their position, and that the integrity of the peer review process is upheld for every paper. Updated links¹ reflect best practices for Editors.

Editors handle sensitive, sometimes cutting-edge material regularly and may themselves contribute to

research published in their field while being editors for their particular journal. The confidentiality of that material and any potential conflicts of interest for authors, reviewers, and editors themselves are important to the authors of the paper and to the integrity of the journal and their reputation. Handling these critical items with care, and understanding what is expected of them in relation to this information, is central to the editor's role. The updated links² reflect best practices for confidentiality.

Ultimately, editors are the guiding hand for their journal in many cases and should understand the intricacies of things like author disputes, errata and retractions, misconduct, and author complaints about rejected manuscripts or questions about the peer review process. The updated links³ refer Editors to recent cases for guidance.

This portion of the White Paper offers resources for editors, journal offices, and researchers to better understand the responsibilities editors have to their journal, authors, and readers, and the important role they play in the life of every manuscript that moves through the peer review process in their journal. Updates made to this portion of the white paper were made to reflect the changes in the industry and to align our mission with high standards our membership conscientiously apply to their journals.

2.2 Authorship and Author Responsibilities (Patricia K Baskin)

Trust is fundamental to scientific communication: Trust that the authors have accurately reported their contributions, methods, and findings, and have disclosed all potential conflicts of interest; and trust that editors have exercised sufficient diligence to ensure accurate reporting and disclosure by authors. The first step in creating transparency for readers is accurate identification of those who participated in the research and the reporting.

This section⁴ of the White Paper focuses on principles to guide authorship-related decisions, policies, practices, and responsibilities. Although these often differ from one scientific discipline to another and even within disciplines, this section summarizes common principles to guide authorship across scientific disciplines.

This section of the White Paper has been updated to include discussion of recently published authorship models, in addition to encouraging authors to use the

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ORCID persistent digital identifier to eliminate brand name confusion and ensure accurate attribution and citations. The section also discusses contributions of non-authors and the use of the Contributors Roles (CRediT) Taxonomy.

2.3 Reviewer Roles and Responsibilities (Erin McMullan)

The importance of manuscript review by qualified subject-matter experts prior to publication is largely accepted as best practice by journal editors. Seen as both guidance editors in the selection process and as adding value to the authors' original submission, the reviewers comments typically offer perspective on the importance of the research, confirm that the authors' methods and references are current, and that their conclusions correctly drawn.

Updates to this section⁵ focused primarily on reviewer selection. While it can be challenging for editors to maintain a large pool of reviewers, it is important that feedback comes from reviewers who are not only qualified, but also are diverse and uncompromised by conflicts of interest. Firstly, while it may be expedient to select reviewers at the top of the list for related published works, that approach does not go far enough to expand the scope of research in a way that reflects the needs of diverse populations. Editors are encouraged to give additional consideration during the selection process that will provide for the perspectives of women, minorities, and geographical regions, among other underrepresented groups. Second, the language in the section describing reviewers responsibilities with regards to conflicts of interest is strengthened, suggesting that beyond disclosing the conflicts, that reviewers should decline the invitation to review if there could be the perception of bias. Decreasing instances of real or perceived bias is important to the integrity of the literature and also to the willingness of the general public to trust in the results of the research.

2.4 Sponsor Roles and Responsibilities (Kelly A Hadsell)

Sponsoring organizations* may be involved in many aspects of the publication process including (but not limited to)

publication planning, authorship, clinical trial registration, and copyright. Sponsors, along with authors and medical communication companies, bear the responsibility to publish medical information in the form of a peer-reviewed manuscript or presentation during a scientific conference in a responsible and ethical manner per recommendations made in various scholarly publishing best practices.

While small updates were made throughout this section⁶ of the White Paper, including updating authorship criteria, the majority of edits focused on disclosures of real or potentially perceived conflicts of interest on the part of authors as well as sponsors. Authors should be transparent in disclosing financial or in-kind support provided them by a sponsor. Similarly, authors must disclose all financial or in-kind support received from the sponsors and disclose current relationships with the study's funding source(s). The sponsor's relationship with the authors should be clearly and fully stated in the conflict of interest disclosure signed by the authors and should list all support received from the sponsor, including the provision of research materials, employment, honoraria, grants, and all other types of material and financial support.

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*In this instance, the term "sponsor" refers to an individual or group providing financial or material support to a study or endeavor, in return for commercial advertisement.

Book Review: *American Sherlock: Murder, Forensics, and the Birth of American CSI*

Morgan Sorenson

American Sherlock: Murder, Forensics, and the Birth of American CSI. Kate Winkler Dawson. New York: G. P. Putnam's Sons, 2020. 335 pages. ISBN 9780525539551

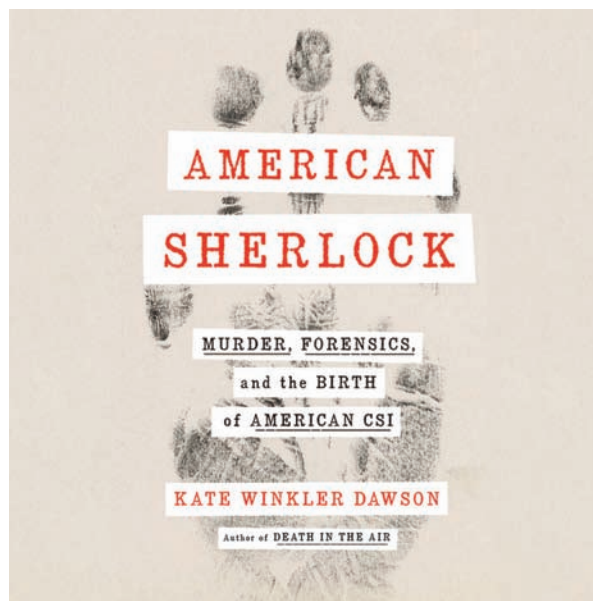
Forensic science has become so firmly planted in the popular imagination of what constitutes police investigation that it's origins in America trace back less than a century.

American Sherlock: Murder, Forensics, and the Birth of American CSI by Kate Winkler Dawson looks at the life of Edward Oscar Heinrich, whose pioneering work in forensic science led him to be dubbed as the American Sherlock of the 1930s. Taking us through his life, Dawson details some of his most famous cases and the methods used to investigate them. Heinrich established many forensic techniques in his lifetime, some with more flaws than others.

Dawson writes in a narrative style, drawing the reader into the story with little details that may or may not have happened. Her storytelling flow keeps the book easy to read; however, some might find the style distracting from the facts of the cases.

American Sherlock begins and ends with one of Heinrich's most famous cases about a man accused of killing his wife. Dawson takes the reader through the case and Heinrich's methods, but in the end, she leaves it up to the reader to determine if the outcome was what it should have been. Throughout, readers encounter movie stars, priests, and a number of other fascinating cases. They learn about the beginning of forensic techniques that are still used by police today—including lie detector tests, fingerprint analysis, and ballistics—and how they were used in court to assist in cases. Readers also learn about methods that were used at the time that are no longer considered reliable in forensics, such as handwriting analysis.

Through excerpts of Heinrich's letters to friends, readers are given a closer and more private view of his personality. He could be scornful of his competitors and their methods,



always feeling that his approach was the best. He tried his best to support his family on his income, but it never seemed enough. Heinrich's personality comes to life in this book through his letters and testimonies, showing readers a man that was both arrogant and admirable and who just wanted to get the correct verdict.

American Sherlock: Murder, Forensics, and the Birth of American CSI is a fascinating look at a generally unknown man in American history. Through the cases discussed, readers learn more about him and his pioneering techniques, as well as his arrogance and the flaws in his professional and personal life. While he never gained great fame (despite all he did to further the science of forensics), this book allows us to look back at his accomplishments. This is a recommended read for anyone interested in crime stories, as well as biographies. Dawson does a great job of combining both in a way that keeps readers' interest throughout the book. While it does have some details that could be off-putting to those who are a bit squeamish, *American Sherlock* tends to focus more on solving the cases than the gory details of the investigations.

The CSE Book Club gives members a chance to interact in a more virtual setting while enjoying a book related to scientific editing/publishing. To learn more, visit <https://www.councilscienceeditors.org/events/cse-book-club/>

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Gatherings of an Infovore^{*}: Reviewing Peer Review

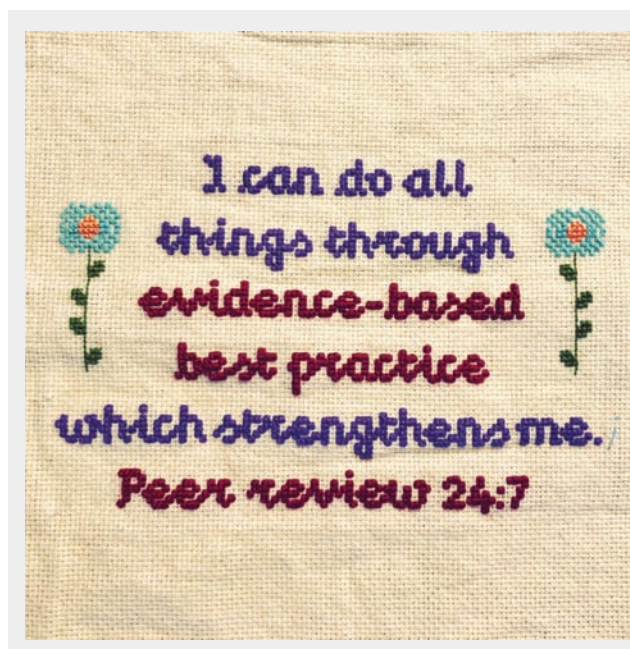
Barbara Meyers Ford

Peer review is the cornerstone of quality assurance within the scholarly publishing process. To have no peer review would result in letting loose on the world treatises from honest and self-serving researchers alike. Faulty methodologies, inaccurate calculations, fraudulent data, outright plagiarism, and excessive hyperbole would go unchecked. However from its beginnings, which can be traced back over 350 years, we have yet to devise anything more perfect. We still grapple with whether it is useful and can be performed in a nonbiased and valid manner. Yes, peer review is an imperfect system, but like democracy, it's the least bad system we've got.

Peer review is meant to not merely separate wheat and chaff but to focus attention on ideas beneficial for the development of a line of inquiry. Scholarly research depends on the circulation of new approaches to sustain advancement in not just traditional areas of study but in the ever-increasing number of interdisciplinary fields. The challenges to the current peer review system's ability to achieve either the promise of accuracy or of fairness have only become more, rather than less, frequent.

There are signs of progress being made to improve the quality of peer review. Prior to the adoption of appeals processes, authors had little recourse to challenge biased reviews whether generated by inexperienced or less-than-competent reviewers or based on conflicts of interest from competitors or "the old guard." Improvements such as the education and training of reviewers, the application and continuous development of software programs, and new approaches such as post-publication and open review have increased each scholarly community's confidence to challenge past and even present approaches. Recent attention and mandates from funders and the general public's awareness of the role played by the peer review process in the larger context of policy have added to this sense of whether mere alterations will suffice or whether systemic change will be inevitable.

With a nod to Peer Review Weeks present and past, this column begins with recent 2020 articles and ends with resources from the Society for Scholarly Publishing's *The Scholarly Kitchen*, spanning a decade. The goal is to present



Credit: https://www.reddit.com/r/CrossStitch/comments/gp3va5/fo_evidencebased_best_practice_peer_review

attitudes and research about the successes and problems resulting from changing or maintaining the status quo. These may assist you and your organization in assessing your current operation and perhaps implementing changes to achieve the best peer review process for your publications.

Publish, profit, predate, perish and peer review

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

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A parallel pandemic: the crush of covid-19 publications tests the capacity of scientific publishing

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The Scholarly Kitchen Archives

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AIP Publishing implements ORCID reviewer recognition service

<https://publishing.aip.org/about/news/aip-publishing-implements-orcid-reviewer-recognition-service/>

There are about 34,550 active scholarly peer-reviewed journals, collectively publishing about 2.5 million articles a year.

(The STM Report, Fourth Edition)

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