SPRING 2021 • VOLUME 44 • NUMBER 1

SCIENCE EDITOR

A PUBLICATION OF THE COUNCIL OF SCIENCE EDITORS

IN THIS ISSUE:

Change

6th Annual
Nursing Department
Program Meeting

October 9, 1979
7:00 pm to 8:00 pm

Masur Auditorium
Clinical Center

Madeleine Leininger,R.N.,Ph.D.
Arthur Levine, M.D.

Meeting poster, 1979. Source: National Institutes of Health (U.S.). Medical Arts and Photography Branch

SCIENCE EDITOR

SPRING 2021
VOLUME 44 • NUMBER 1

www.CSEScienceEditor.org

www.CouncilScienceEditors.org

VIEWPOINT

FEATURES

PERSPECTIVE

INTERVIEW

PRIMER

DEPARTMENTS

On the cover: Close up of panther chameleon skin. Photo by Mary Shattock via Flickr https://flic.kr/p/optV31 (CC BY-SA 2.0).

Beyond Access into Accessibility

Jonathan Schultz

Imagine, for the purposes of this Viewpoint, that the dreams of Open Access advocates and organizations like cOAlition S are realized tomorrow and all research articles published anywhere become immediately, freely available to all in a sustainable way. And, let's imagine this is done in a way that manages to satisfy the needs of all stakeholders, from publishers to librarians to researchers. Even in this possibly utopian scenario, the goal of making scientific research available to all would not be complete because "access" is just the beginning. To make an article truly available to all readers and researchers, we need to move beyond access into accessibility.

Accessibility is about ensuring that the greatest number of people not only have access, but also are actually able to use your product or service, including those with impairments or disabilities. In publishing, this is typically considered in terms of making articles and published research consumable by readers with visual impairments or cognitive disorders, such as dyslexia. This is the type of accessibility that Bill Kasdorf discusses in his article "The Important Role of the Editor in Making Science Accessible." Web technologies, including the increasingly adopted EPUB standard, are making it easier for scientific articles to have accessibility built in from the beginning, especially when compared to the omnipresent (and increasingly antiquated) PDF, but they have not been universally adopted.

> ***To make an article truly available to all readers and researchers, we need to move beyond access into accessibility.***

Somewhat uniquely for scientific publications, making figures accessible is also essential. It is not uncommon for a researcher say, "I mostly just look at the figures," which makes sense because for many articles, the figures contain the gist of the results or the bulk of the data. However, figures are also the least accessible part of an article as they are completely skipped by screen readers and other assistive technologies. While image alt-text provides some additional context, as Bill notes, this is often insufficient for detailed scientific figures, and scientific publications need to be using the less commonly known "extended descriptions," or <detail> metadata field. Extended descriptions can go through each part of the figure in detail for readers who are unable to see the image, including text that may only exist as part of the image. There is a skill to writing these descriptions, and as Bill contends, editors can play a significant role by requiring them during the peer review process and ensuring they are understandable and comprehensive. Ideally, it would be the editor's and publisher's role not only to provide access to articles, but also ensure they are accessible too.

This accessibility can also extend to guaranteeing that all components—such as data, code, and metadata—that are required for understanding and reproducing research are accessible. As with web accessibility, this becomes easier as the metadata around articles becomes richer. As we get better at tagging components and article information in a standardized manner, they can be found, read, and reused more efficiently by machine-readers and other services, expanding the usefulness of the research. There are also efforts to create a more robust metadata-rich infrastructure to track the lifecycle of a research project. An example of this can be seen in the article by Olveska and colleagues on "Ensuring Reproducible Research Requires a Support Infrastructure: The Value of Public Registries to Publishers." As described by the authors, research preregistration involves researchers outlining in a public and/or time-stamped manner their intentions, including hypothesis, protocols, and statistical analysis plan, prior to conducting the research. These records help minimize some questionable research practices and provide a transparent accounting of research that is being conducted, which is why it has been a requirement for publishing clinical trials for over a decade. Olveska et al argue that expanding this requirement, or at least recommendation, to all research will help create a more transparent and accessible scientific record.

Another form of accessibility that should be considered is whether jobs and opportunities are equally accessible to all, regardless of their race, ethnicity, gender, or other demographics. What good is having access to research publications if you can't pursue your own research due to historical inequities and prejudices? The past year has seen a reckoning at research intuitions and funders as to the role they have played in perpetuating these inequities as well as an exploration of the changes they need to make. Likewise, in scientific editing and publishing, there has been a focus on the demographic makeup of editorial boards and invited authors and a renewed interest in initiatives such as the Coalition for Diversity and Inclusion in Scholarly

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

CONTINUED

Communications (C4DISC; https://c4disc.org/). It's in this context that Melissa Schmidt writes about the importance of "Cultivating a Culture of Respect for Our Profession" in her Perspectives article "Evidence of Esteem." As Melissa notes, as we seek to diversify our workplaces, we need to simultaneously address power imbalances that may harm both individuals and the quality of scientific publications.

By making scientific publications, research workflows, and organizations more accessible to all, we are helping to make a future where the focus is less on who can access research, but how they can use that research when they do.

In their preview of the CSE Annual Meeting in May 2021, program co-chairs, Emma P Shumeyko and Brittany Swett, announce the theme of the meeting is "Shaping Our Future by Embracing Adaptability." With changes occurring at a lightning pace, being able to adapt is essential for any journal or organization to thrive. Importantly, accessibility and adaptation are intertwined because accessible infrastructures are more adaptable. We cannot plan for everything, but when we make our publications and organizations more accessible and transparent, we make them richer and more open to adaptation. As an example, articles with detailed extended descriptions are more accessible not only to a greater number of readers, but also machine-readers, which may become key in some future innovation. When the goal is making research accessible, what may seem like a narrow accommodation may unlock unknown benefits.

> ***We cannot plan for everything, but when we make our publications and organizations more accessible and transparent, we make them richer and more open to adaptation.***

Emma and Brittany have selected a chameleon as the meeting's representative image as it is nature's "quintessential example of an organism using the power of adaptation to survive and thrive." For this reason, a close-up detail of a chameleon's skin graces this issue's cover. Chameleons adapt to changing landscapes and circumstances, altering their skin colors to fit their surroundings or needs. An aspect of the adaptation that I find interesting is that recent research (https://www.nature.com/articles/ncomms7368) has shown that for many chameleons, these changes are occurring not just in a single layer of skin, but in a matrix of different layers working in unison. It's the interplay of layers that allows chameleons to quickly change in complex ways. In a sense, by working together, the layers are able to better adapt than any single layer could on its own.

We continue this Spring 2021 issue of *Science Editor*, with two new interviews of Editors-in-Chief, as Leonard Jack, Jr discusses the importance of "Preventing Chronic Disease Through Statistical Rigor" while José G. Merino expounds "On the Little Decisions That Shape the Future." For another take on being an EIC, Barbara Gastel writes about the editorship of Michael Chibnik in her review of his book "Scholarship, Money, and Prose: Behind the Scenes at an Academic Journal." Also, Jamie Teixeira da Silvia reminds us to avoid "Confusing German Eszett (β; ß) with Greek beta (β) in Biomedical Writing."

Next, Stacy Christiansen examines protecting patients' rights in "I Know That Guy: Balancing Confidentiality With Sharing Knowledge," and Jennifer Regala suggests how to manage a social media presence that is both personal and professional in "Putting Your Best Voice Forward: Considering Voice and Style in Your Social Media Posts." Finally, we close out the issue with Barbara Meyers Ford's "Gatherings of an Infovore" as she explores the post COVID landscape and asks the crucial question "What's Next?" We shall see, but hopefully it will be more accessible and equitable than what came before.

Ensuring Reproducible Research Requires a Support Infrastructure: The Value of Public Registries to Publishers

Anastasia Olevska, Bettina Bert, Lida Ebrahimi, Gilbert Schönfelder, and Céline Heinl

The scientific community widely discusses preregistration. The main idea of preregistration is being able to untangle the a priori hypothesis from the outcome-driven and exploratory analyses once the data is generated. Researchers can ensure neutrality towards their data and an objective evaluation of the study outcomes by cultivating a record of the study, starting with the study plan. This record is especially valuable during the peer review process by assisting publishers in retracing the hypothesis generation and data analysis.

Researchers have a couple of options for sharing their methods, plans, statistical analyses, and results with publishers: as a study protocol in a public registry (database) or as a registered report in a journal. The content of a preregistered study depends on the requirements of the database or journal. It can range from detailed study and analysis protocols to a simplified documentation of the exploratory process of data collection without an explicit plan for data evaluation. Publishers' confidence in the reproducibility of research findings grows the more comprehensively the experimental plan is documented a priori, including what the authors expect to find and what these findings will mean. Public registries can offer multiple advantages and, if supported by journals, open up preregistration to a broader range of researchers. The requirement by the International Committee of Medical Journal Editors that clinical trials need to be registered prior to publication was an important milestone for the acceptance of preregistration among clinical researchers. The adoption of similar strategies by journals in preclinical and fundamental research could result in an improvement of study quality and reproducibility in these fields.

ANASTASIA OLEVSKA (0000-0003-0612-1631), BETTINA BERT (0000-0002-8202-9290), LIDA EBRAHIMI, and CÉLINE HEINL (0000-0003-3369-1939) are with German Federal Institute for Risk Assessment, German Centre for the Protection of Laboratory Animals (Bf3R), Berlin, Germany. GILBERT SCHÖNFELDER (0000-0001-6134-1990) is with German Federal Institute for Risk Assessment, German Centre for the Protection of Laboratory Animals (Bf3R) and Charité - Universitätsmedizin Berlin, corporate member of Freie Universität Berlin, Humboldt-Universität zu Berlin, and Berlin Institute of Health, Berlin, Germany.

The Value of Public Registries

A recent *Science Editor* article[1] illustrated the key features of registered reports. In brief, researchers submit the introduction, methods description, and analysis plan of their study for peer review in a journal prior to performing the experiments. Once the proposal is accepted, it is registered and, assuming that the authors have followed the submitted protocols, the publication of the results does not depend on the study outcomes. This concept directly affects publication bias—a strong preference for publication of positive findings. Furthermore, it promotes the idea that well thought-out and planned experiments are significant regardless of their outcomes.

In this commentary, we highlight preregistration of study protocols in public registries. It requires researchers to write a detailed protocol of the study plan, including a description of the methods and statistical planning, which is then time stamped and saved in a permanent database. Similar to registered reports, they have the potential for accurate documentation of study designs, and their record can be submitted to a journal together with the manuscript. The key difference lies in the faster registration due to the absence of a peer-review process, which can include several steps with revisions. Preregistration could offer an easier solution if, for example, at the beginning of the project, the peer-review process as carried out by peers from the same research area is met with reservations. Because of embargo periods offered by the preregistration platforms, the study plan would not necessarily be made public at the beginning of the study.

In most registries (e.g., preclinicaltrials.eu[2] or Open Science Framework Preregistration[3]), other researchers can still access registered study designs and compare them to the published

CONTINUED

Table 1. Preregistration platforms for preclinical studies.

Platform	Host	Launch	Scientific Focus
Animal Study Registry https://www.animalstudyregistry.org	German Federal Institute for Risk Assessment, Germany	2019	Animal studies
As Predicted https://aspredicted.org/	Wharton Credibility Lab, University of Pennsylvania, USA	2015	All studies
OSF Preregistration https://osf.io/prereg/	Open Science Framework, USA	2013	All studies
Preclinicaltrials.eu https://preclinicaltrials.eu/	Utrecht University, The Netherlands	2018	Animal studies

data after the embargo period is over (for an overview of preregistration platforms for preclinical studies, see Table 1). However, other registries such as the As Predicted platform (launched by the Wharton Credibility Lab of the Wharton School of the University of Pennsylvania in 2015)[4] allow the completed records to be private for an unlimited time. Once the study is ready to publish, the record of preregistration can serve as a foundation for the manuscript, saving additional time and resources at the submission stage. Reviewers and editors can verify that the study was conducted according to the study plan by comparing a preregistered study together with the submitted manuscript. The initial documentation of the study proposal together with the time stamp may provide further assurance for researchers and publishers if concerns about the research's originality arise.

Using open registries allows for more flexibility in terms of adaptation of the initial plan and the choice of a journal for submission. Frequently, it will make sense to test additional hypotheses and to include alternative data analyses with those anticipated in the preregistration. Exploration has always been an important part of the scientific process. However, having the option of preregistration and reporting these analyses as expansions of the planned protocol adds to the overall transparency and prevents often unintentional and questionable research practices such as p-hacking and HARKing (**H**ypothesizing **A**fter **R**esults are **K**nown).[5] Further, follow-up studies or small parts of a larger research project can be easily preregistered using already existing study templates. The choice of a journal to which a manuscript is submitted is left to the researcher and often is made according to the study results. Preregistration fosters transparency on the researcher's side, but there is no obligation by the journal to publish the outcomes of a preregistered study. In order to be able to connect a preregistered study to the published data and to address publication bias, it is crucial that preregistration platforms provide the possibility to link a study to the respective publication(s) or data repositories.

The Animal Study Registry

Preregistration in a public registry offers numerous advantages to researchers, for example, in assisting with the statistical analysis and the overall study planning process.[6] However, recent evaluations estimate that the proportion of preregistered studies will not increase by itself and depends on external incentives.[7] For human clinical trials, preregistration of medical interventions and treatment research is now required by law as well as medical journals.[8] This policy makes all findings available to the decision makers, health professionals, and patients who weigh in on the decision whether to implement a treatment. One of the well-established clinical trial registries, clinicaltrials.gov,[9] has registered over 350,000 research studies from 216 countries. Another platform open for registrations from different research areas and run by the Open Science Framework has records of around 319,000 entries, most of which are for studies from psychology and the social sciences.[3] For other types of studies, its endorsement by publishers and editors can encourage the use of preregistration.[10] In particular, the poor reproducibility and transferability of results from animal studies into clinical research in humans has influenced the credibility of the entire field of animal research.[11] Here, a poor experimental design and an incomprehensible execution or analysis of planned animal experiments not only have significance for external validity but also for animal welfare and the guiding principles of the 3Rs by William Russel and Rex Burch (**R**eplacement, **R**eduction and **R**efinement[12]). Superfluous animal experiments or their "unethical" use is often the consequence.[6] By following a series of animal studies from their approval by an animal ethics committee to publication, a recent study found out that in the sum of all publications only 26 % of the used animals were reported.[13]

The public and free platform Animal Study Registry (ASR)[14] has been developed for registering exploratory and confirmatory animal experiments in applied and preclinical science with a focus on animal welfare.[15] Similar

CONTINUED

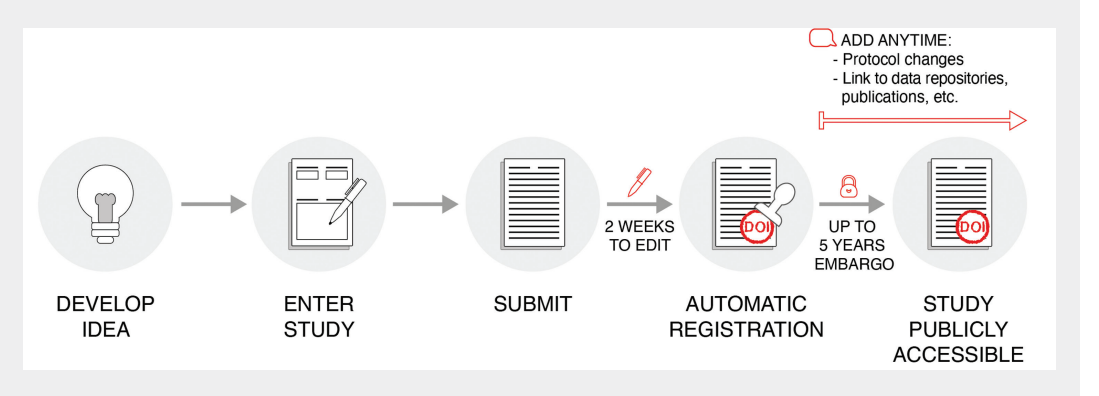


Figure 1. The workflow in Animal Study Registry (adapted from Bert et al.[15] and Kousta et al.[3]).

to other registries, it guides researchers through planning, execution, documentation, and statistical analysis of their studies (Figure 1).[16,17] However, during the registration process, scientists have to answer animal experiment–specific questions. The questions are based on the ARRIVE Guidelines for reporting animal research and are essential for reproducibility and the peer-review process for animal research.[18] Once submitted, the authors can edit a study for next 2 weeks before it is automatically registered. In parallel, the ASR confirms that the submitted study meets basic requirements: 1) the study is written in English, 2) animals are involved, and 3) the content is nonoffensive. A study automatically receives a digital object identifier (DOI) following registration, which supports the manuscript peer-review process and marks the intellectual property of the author. Thereafter, an embargo period of up to 5 years can be applied to every registered study before it becomes publicly available. After registration, a printed version of the registered study, including full study details and metadata, can be downloaded and submitted together with the manuscript to publishers irrespective of the embargo. Study authors can add comments at any time after study registration. This allows researchers to explain changes to the original study and, most importantly, provide links to data repositories or publications.

The idea for ASR came from the German Centre for Protection of Laboratory Animals (Bf3R). The German Federal Institute for Risk Assessment hosts the platform, ensuring the continuity of provision and data security. But the demand for preregistration of animal experiments has also been recognized by the founders of the preclinicaltrials.eu platform in the Netherlands.[2] Together, we hope to embed preregistration into the 5 steps of scientific process: planning, execution, documentation, analysis, and publication of an animal research study.

Implementation in the Publication Process

There is consensus about the potential of preregistration for reducing the irreproducibility of research data. However, it can be a challenge for researchers to go against the accepted practice of not sharing their work until they write the manuscript. For the preregistration platforms to contribute more effectively to improving the transparency and quality of animal research, journals and publishers now have the

Table 2. Integration of preregistration in the publication process.

Submission	• The choice of a journal for manuscript submission is flexible and made according to the study outcomes. • Detailed description of the study design can be submitted to a journal together with the manuscript.
Manuscript peer review	• Reviewers of the manuscript and editors of the journals can verify that the study and analyses were conducted according to the study plan by comparing the preregistered study record with the submitted manuscript. • The record of the study together with the time stamp provides assurance for researchers and publishers if concerns about intellectual property arise. • There is added value and transparency in the review process without additional costs for authors or journals if public preregistration platforms are used.

CONTINUED

task of responding to the increased need for preregistration of research projects. The earlier the communication, the more researchers can be reached at the initial stages of their projects.

Comparing public registries to registered reports offers the opportunity for journals to benefit from the advantages of preregistration without additional costs (Table 2). Some journals have already recognized the added value of preregistration to the submission and reviewing processes and are taking steps towards this. One example is the endorsement of animal experiments preregistration by the American Association of Cancer Research in their editorial policies.[10] However, preregistration needs more active advocacy.

Asking authors additional questions during the manuscript submission process about whether the study has been preregistered can help to disseminate preregistration in the research community and might encourage scientists to register their follow-up studies. Journals could choose to clearly label preregistered studies and thus acknowledge the efforts of the authors who have already endorsed preregistration. Likewise, editors can raise awareness on the reviewer's side: Because reviewers might not yet be familiar with the concept of preregistration, advertising public registries may not only help with reviewing the received manuscripts, but also motivate them as scientists to register their own studies. Our concern is that without clear recommendations, guidelines, or policy from publishers—similar to the adoption of preregistration in clinical research—we leave researchers in an ambiguous position. To prevent selective reporting and unnecessary duplication, and to increase the reproducibility of preclinical and fundamental research, the endorsement of preregistration as pioneering work by journals is pivotal. This is especially the case for the preregistration of animal studies.

References and Links

1. Kousta S, Pastrana E, Swaminathan S. Three approaches to support reproducible research. Sci Ed. 2019;42(3):77–82. [accessed February 8, 2021]. https://www.csescienceeditor.org/article/three-approaches-to-support-reproducible-research/.
2. https://preclinicaltrials.eu/
3. https://osf.io/prereg/
4. https://aspredicted.org/
5. Dirnagl U. Preregistration of exploratory research: learning from the golden age of discovery. PLoS Biol. 2020;18(3):e3000690. https://doi.org/10.1371/journal.pbio.3000690.
6. Heinl C, Chmielewska J, Olevska A, Grune B, Schönfelder G, Bert B. Rethinking the incentive system in science: animal study registries: preregistering experiments using animals could greatly improve transparency and reliability of biomedical studies and improve animal welfare. EMBO Rep. 2020;21(1):e49709. https://doi.org/10.15252/embr.201949709.
7. Sherry CE, Pollard JZ, Tritz D, Carr BK, Pierce A, Vassar M. Assessment of transparent and reproducible research practices in the psychiatry literature. Gen Psychiatr. 2020;33(1):e100149. https://doi.org/10.1136/gpsych-2019-100149
8. European Commission. Clinical trials – regulation EU No. 536/2014; revision of section 6.
9. https://clinicaltrials.gov/
10. American Association for Cancer Research. Editorial policies. [accessed February 8, 2021]. https://aacrjournals.org/content/authors/editorial-policies.
11. Bailoo JD, Reichlin TS, Würbel H. Refinement of experimental design and conduct in laboratory animal research. ILAR J. 2014;55(3):383–391. https://doi.org/10.1093/ilar/ilu037.
12. Russell WMS, Burch RL. The principles of humane experimental technique. London, UK: Methuen; 1959.
13. van der Naald M, Wenker S, Doevendans PA, Wever KE, Chamuleau SAJ. Publication rate in preclinical research: a plea for preregistration. BMJ Open Sci. 2020;4:e100051. https://doi.org/10.1136/bmjos-2019-100051.
14. www.animalstudyregistry.org
15. Bert B, Heinl C, Chmielewska J, Schwarz F, Grune B, Hensel A, Greiner M, Schönfelder G. Refining animal research: The Animal Study Registry. PLoS Biol. 2019;17(10):e3000463. https://doi.org/10.1371/journal.pbio.3000463
16. Nosek BA, Ebersole CR, DeHaven AC, Mellor DT. The preregistration revolution. Proc Natl Acad Sci U S A. 2018;115(11):2600–2606. https://doi.org/10.1073/pnas.1708274114
17. Kilkenny C, Browne WJ, Cuthill IC, Emerson M, Altman DChamuleau SAJ, van der Naald M, Climent AM, Kraaijeveld AO, Wever KE, Duncker DJ, Fernández-Avilés F, Bolli R; Transnational Alliance for Regenerative Therapies in Cardiovascular Syndromes (TACTICS) Group. Translational research in cardiovascular repair: a call for a paradigm shift. Circ Res. 2018;122(2):310–318. https://doi.org/10.1161/CIRCRESAHA.117.311565
18. G. Improving Bioscience Research Reporting: The ARRIVE guidelines for reporting animal research. PLoS Biology 2010;8(6):e1000412. https://doi.org/10.1371/journal.pbio.1000412

The Important Role of the Editor in Making Science Accessible

Bill Kasdorf

Making publications accessible for people with print disabilities* is finally becoming more common. This is long overdue. In the past, it involved the creation of special accessible file formats in addition to the standard formats in which books and journals are published, and the editorial and production workflows that produced those accessible formats were based on technologies and standards that few publishers and few of their suppliers understood, or even knew of. This was particularly a problem for science, because of the complexity of typical scientific publications full of equations, tables, notes, citations, and figures. It was all too easy to acknowledge the importance of accessibility but to throw up one's hands and say, "But there's no way we can do that, sorry!"

> ***Editors can play a crucial role in getting this to happen—and getting accessibility right.***

This is no longer the case. Most publishers, even science publishers, are much closer to having fully accessible publications than they realize because the file formats and standards they commonly use are now, or can easily be converted to, the ones recommended for accessible publications. (This is described in detail in the following section.) Editors can play a crucial role in getting this to happen—and getting accessibility right.

In my work over the past four decades, I've focused on standards, markup, and publishing technologies, mainly for scholarly and scientific, technical, and medical (STM) publishers. The first two of those decades were dominated by proprietary tools, technologies, and formats. At that time, when I had my own design, editorial, and production services business, it was difficult to convince publishers to pay attention to our advice to address accessibility. Even in the third decade, when I had sold that business and focused on consulting, accessibility was a hard sell. It is very gratifying to see publishers today seriously focusing on this—and, increasingly, making their publications accessible from the start.

BILL KASDORF (0000-0001-7002-4786) is Principal, Kasdorf & Associates, LLC; Founding Partner, Publishing Technology Partners; W3C Global Publishing Evangelist.

Publications Can Be "Born Accessible"

Today, it is entirely possible for a publisher's standard editorial and production workflows to make their standard products—websites, journal articles, and books—accessible from the start. That means print disabled people don't have to wait for a special accessible version to be created for them: They can obtain the same publication everyone else does, at the same cost, from the same retailers, aggregators, or libraries, at the same time that everyone else does. This is considerably more efficient and less costly to the publisher and/or its customers than having to create special versions of publications for accessibility.

The reason for this development is that the file formats and standards that are now recommended for accessible publications are the ones that publishers and their vendors use routinely. The DAISY Consortium,[1] the global accessibility advocacy and standards organization, now recommends EPUB 3[2] as the proper format for the interchange of accessible publications. EPUB is far more generally accessible than PDF[3] for the following reasons:

1. It can be reflowable and effectively viewed on everything from a phone to a laptop.
2. Low vision, dyslexic, and users with other vision or cognitive disabilities can change fonts, font sizes, line spacing, colors, and other parameters in many EPUB readers as they need to.
3. Most phones and tablets can speak the content to a visually impaired user.
4. EPUB offers better navigation capabilities.
5. Assistive technology (AT), such as screen readers, can understand the structure of the publication in very useful ways.

The reason EPUB is so ideal for accessibility is that it is based on the standard technologies of the Open Web Platform like HTML and CSS, and its standards for making EPUBs accessible[4] are the same standards that are used for

*The term "print disabilities" refers to people who have difficulties consuming print: people with visual impairments (e.g., blind or low vision), cognitive disability (e.g., dyslexia), or any other type of disability that interferes with the ability to consume print.

CONTINUED

making websites accessible. No longer a highly specialized and little-known format, EPUB and the technologies it is based on are ones that are virtually universally understood and used for websites, books, and journals.

Scholarly publishers often think that the specialized formats used in STM (scientific, technical, medical) make scholarly and scientific publications an exception. But in fact, scholarly, and especially STM, content is ideally positioned for accessibility. While the *lingua franca* of scholarly publishing is JATS XML for journals and BITS XML for books, those XML files are far more thoroughly and consistently structured than those used by almost any other sector of publishing. That means that a richly structured HTML content document, for a website or an EPUB, can usually be automatically created without needing any human intervention, even for scientific content. The math format understood by AT is MathML, which is by far the most common way of tagging math in STM book and journal workflows. While the EPUBs currently produced often lack the MathML, instead having inaccessible images of equations, the MathML is almost always present upstream in the publishing workflow. And, JATS and BITS now recommend the use of the HTML table model—precisely what AT is programmed to understand.

Well-structured STM book and journal files are ideal for conversion to accessible EPUB. Most STM books and journals are extremely close to being born accessible. Close, but not quite there.

The Issue of Image Descriptions

The missing component in most current editorial and production workflows is the creation of proper image descriptions for visually impaired users. The purpose, especially for scholarly and STM content, is not just to say what an image is a picture of, but to provide to the visually impaired user what the image conveys to a sighted user. For example, just saying "a chart of the change in literacy in five countries over the past ten years" isn't sufficient; a person who can't see the image needs to know what kind of chart it is, which five countries it concerns, and what the change for each of them was from a specific starting date to a specific ending date—all things that such an image would convey to a sighted user.

Websites and EPUBs often do, technically, have "alt text" for images; that's because the <img> element in HTML that contains or points to the image requires an "alt" attribute. Because systems are programmed not to accept invalid HTML, the alt attribute is common, but its content is almost always missing, inadequate, redundant, or annoying.

I see hundreds of examples in my consulting work. Most common is the "empty alt" or "null alt": alt="". That is cheating (usually), but it gets past the validator. Other common

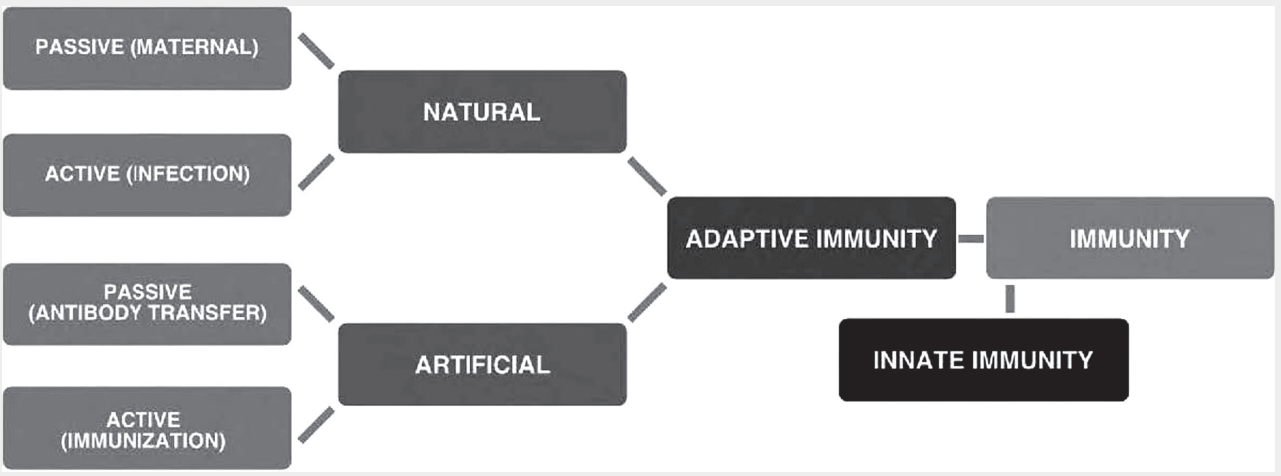


Figure 1. Example figure with separate legend, alt text, and extended description.
Figure legend: Outline of human immune system.
Alt text: Flow chart describing how immunity develops in humans.
Extended description: Parallel boxes labelled "Passive (maternal)" and "Active (infection)" lead to a box labelled "Natural." Below this, a parallel set of boxes labelled "Passive (antibody transfer)" and "Active (immunization)" lead to a box labelled "Artificial." The parallel boxes "Natural" and "Artificial" lead to a box labelled "Adaptive immunity" which then leads to one labelled "Immunity." Below that, a box labelled "Innate immunity" also leads to "Immunity."

CONTINUED

strategies: repeating the caption in the alt text (which means it is read to the print disabled user twice by AT like a screen reader) or putting the file name or path of the image in the alt text (imagine being a screen reader user and having that read to you for every image!). Further complicating this, what are called "decorative images"—images that don't convey meaningful content—are actually supposed to use the null alt, in an expression like this: .

What's more, the alt attribute can only contain plain text with no markup; it is intended for a very brief description, often characterized as about the length of a tweet. The images in STM publications often require what are called "extended descriptions" in order to convey to a print disabled user the content that a sighted user obtains visually. These are separate elements in the HTML, usually provided in notes or, better still, in the <details> element, which can contain markup. This is quite useful; for example, a list might be used to describe the bars in a bar chart or the steps in a workflow diagram. (Using the <details> element enables them to be hidden from sighted users and shown only on request by the user of AT.)

Getting This Right Calls for an Editor

It will not surprise any reader of *Science Editor* that the task of getting image descriptions right is fundamentally an editorial task. Making the judgments required and being attuned to the subtleties involved are precisely what editors are good at. This goes for much of accessibility; it is most obvious in the case of image descriptions.

Before you panic—I realize how overloaded most editors already are—I need to point out that I'm not saying a particular editor needs to do all the work. While the method of obtaining image descriptions varies in different sectors of publishing—many trade and educational publishers, for example, outsource the creation of image descriptions, and there are indeed some very good services available—I have always advocated, for scholarly publishers, that the image descriptions should start with the author. The reason is that the image description should not just say what the image is a picture of—it should convey what that image is intended to convey to a sighted user. Who knows better why a given image is being provided than the author?

> ***Often the process of creating the image descriptions can make the manuscript better in general.***

I am careful always to refer to these as *draft image descriptions*. While the author should know best what the image is intended to convey, it's an editor who should know best how to write a good image description. And, although image descriptions are often considered an aspect of production (sometimes not being created until well after the content is otherwise finalized) it actually makes a great deal of sense to do this work as far upstream as possible—ideally, requested as part of the peer-review/revision process or at least upon acceptance, well before a manuscript is turned over to production. Often the process of creating the image descriptions can make the manuscript better in general.

The Benefits of Upstream Image Descriptions

One of the publishers whose work in this area I've been following for a long time is the University of Michigan Press. I often use them as an example of a publisher that is getting accessibility right. Because they are a medium-sized university press, they are easier for many publishers to relate to than a giant like Elsevier (who, I should say, has also done exemplary work in accessibility over the years). University of Michigan Press is the first university press in the world to have attained Benetech's Global Certified Accessible status,[5] which certifies their editorial and production workflows as producing properly accessible EPUBs.

In preparation for writing this article, I had a lengthy conversation with Charles Watkinson,[6] the Director of the University of Michigan Press who also serves as Associate University Librarian for Publishing, overseeing the broad publishing activities and repository services at the university. Most of the content of this section of this article is based on that conversation.

Charles started out by observing that "the biggest learning experience was how far upstream this matters: the closer to the subject matter, the better the accessibility." The Press has found that this often significantly improves the content itself. Their editors "get authors to write in a way that integrates the image description in the text."

This has several benefits. First, if the image is sufficiently described in the text, an extended description is not necessary, making the text better for all readers. And, Charles observed that "the fact that authors have to be more thoughtful about why they're including an image actually cuts down on the number of images," eliminating all the other issues that an editor would have needed to deal with for those excluded images—technical issues like resolution, rights issues, and so forth—thus paying dividends downstream in the editorial and production workflow.

[†]While having Stephanie on campus is admittedly quite an advantage for Michigan, most universities have accessibility specialists, and there are many consultants and services who can provide such training.

CONTINUED

> ***The fact that authors have to be more thoughtful about why they're including an image actually cuts down on the number of images.***

Once the draft image descriptions are obtained, it is the editorial assistants at Michigan who refine them. According to Charles, "They really like doing it. It's creative work, and it's important, meaningful work."

The editorial and production staff at Michigan was trained by Stephanie Rosen, Accessibility Specialist at the University of Michigan.† She's the author of *Publishing and Accessibility*[7] and also led the development of Describing Visual Resources Toolkit,[8] both of which align with the approach I recommend for scholarly publishers. That resource is focused on arts and humanities publications, so although it would be useful in general to the readers of *Science Editor*, the Image Description Guidelines[9] provided by Benetech's DIAGRAM Center are more science-oriented, with concrete examples of the kinds of images found in STM publications.

Editors Are Key to Making Accessibility Work

I have focused on image descriptions because they are the most obvious place for editors to have an impact on making publications accessible. However, I want to close by pointing out how well suited the talents and expertise of editors are to making a success of accessibility for a publisher.

In our conversation, Charles remarked that "the key to getting accessibility right is to keep in mind the potential audience. That's what publishers do." I would point out that especially, that's what editors do.

An important aspect of accessibility is for the content to be well structured. That's what editors do. It's important for it to be clear and complete. That's what editors do. It's important for it to be suited to the needs of the publisher's subscribers and readers. That's what editors do. It's important for it to have good descriptive metadata, including metadata both in the publication and for the supply chain, that accurately describes the publication's accessibility. And it's important to a publisher for the work of making publications accessible not to make them more difficult or costly to produce. If the editorial practices that make publications accessible are implemented upstream in a workflow, those publications can be far better and no more costly to produce—and far more desirable in the market.

Soon, I'd like to be able to say, without fear of contradiction, "Publishers need to get accessibility right. That's what editors do."

References and Links

1. https://daisy.org/
2. https://www.w3.org/publishing/epub3/index.html
3. The DAISY Consortium. It's time to use the modern digital publishing format for your organization's documents. [accessed March 12, 2021]. https://daisy.org/info-help/time-to-use-the-modern-digital-publishing-format/
4. https://www.w3.org/Submission/epub-a11y/
5. https://bornaccessible.benetech.org/certified-publishers/
6. https://www.lib.umich.edu/users/watkinc
7. Rosen S. Publishing and accessibility. London, UK: ATG Media; 2018. https://doi.org/10.3998/mpub.10212548
8. https://describingvisualresources.org/
9. http://diagramcenter.org/table-of-contents-2.html

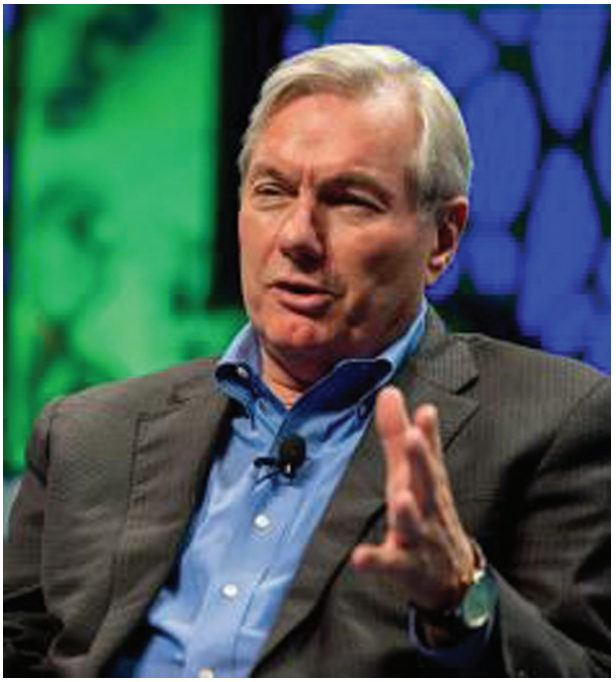
CSE 2021 Annual Meeting: Shaping Our Future by Embracing Adaptability

Emma Shumeyko and Brittany Swett

The 2021 CSE Annual Meeting will take place May 3–5, and as this year's Annual Meeting Program Co-Chairs, we are hard at work putting together the educational content and networking opportunities that have made CSE so indispensable to our own professional careers. We have fully embraced the positive aspects of a virtual event that will allow more colleagues to access and engage with the educational sessions and programming that are the hallmarks of a CSE Annual Meeting. The 3-day virtual meeting schedule was developed with an aim to provide the full CSE Annual Meeting experience we know and love in a format that acknowledges, and caters to, the constraints on our time and attention in a virtual space. We hope this new format will help everyone balance meeting attendance with work and home life obligations.

The theme for this year's meeting is "Shaping Our Future by Embracing Adaptability." In the past year, each of us have had to increase our capacity to be flexible by adapting to changing environments in the workplace, the scholarly publishing industry, and our personal lives. The biological concept of adaptation showcases the importance of embracing change to better face the realities of the world in which we now find ourselves. The pace of change in our industry has accelerated rapidly in the last year, and the numerous innovations in response to those changes are more important than ever. With the future before us looking evermore unpredictable, we can take an active role in crafting the futures we want for ourselves by choosing to adapt.

The chameleon, nature's quintessential example of an organism using the power of adaptation to survive and thrive, is this year's annual meeting image. The ethos symbolized by the chameleon will be underscored and celebrated throughout the meeting's content and programming. The 2021 Program Committee has been using their creativity, time, and networks to organize informative and engaging sessions that exemplify this year's theme. Sessions were developed to cover practical topics relevant to editorial and production offices as well as broader subjects related to the scholarly publishing industry as a whole. A small sampling of what you'll see this year includes fast-track workflows, accessibility in publishing, an XML primer, submission system and publisher transitions, best practices for engaged editorial board meetings, and managing mandates.



This year's keynote speaker is Michael T Osterholm, PhD, MPH, a renowned epidemiologist and founding director of the Center for Infectious Disease Research and Policy at the University of Minnesota, as well as a member of President Biden's COVID-19 Advisory Board. More than a year into the COVID-19 pandemic, we are all living out the scenarios that Dr Osterholm and others have been preparing for and warning of for years. We look forward to hearing from Dr Osterholm on the lessons learned from the current pandemic that will inform our actions as we prepare for the next pandemic. Specifically, how can scholarly publishing professionals support an improved response and the dissemination of accurate information to the public during times of public health crises. Dr Osterholm is also the author

EMMA SHUMEYKO is the Managing Editor of PNAS. BRITTANY SWETT is the Executive Director of J&J Editorial, LLC.

CONTINUED

of *Deadliest Enemy: Our War Against Killer Germs* (2017), a prescient look at the large-scale threat posed by pandemics in an interconnected global society. The CSE Book Club invites you to an author Q&A after the keynote talk to kick off the group reading of this book.

Epidemiologist Jessica Malaty Rivera, MS, a science communicator who specializes in translating complex scientific concepts and facts into plain language and making information accessible for individuals outside the scientific community, will be our plenary speaker. Malaty Rivera uses her Instagram account (https://www.instagram.com/jessicamalatyrivera/?hl=en) to reach a broad audience and share unbiased scientific facts about the COVID-19 pandemic, and we can't wait to hear her thoughts on how to improve the communication of science to general audiences.

Michael Clarke will moderate a debate on whether and how journals should be responsible for investigating informal and/or anonymous ethical concerns. While we all agree that upholding the integrity of the scientific literature is paramount to our role as science editors, logistical practicalities and finite resources must be taken into consideration when determining who in the scholarly ecosystem is responsible. Will this final general session for the 2021 CSE Annual Meeting change minds and editorial policies?

Connecting with colleagues in a collegial and engaging environment is more important and valuable this year than ever before. We're dedicated to replicating some of our favorite parts of the CSE Annual Meeting in a virtual format. Attendees will have the opportunity to network during scheduled breaks and early evening activities, including the competitive fun of team trivia. Sessions will be as interactive as ever with thoughtful discussions during roundtables, hands-on learning from short courses, and group discussion during the Ethics Clinic. The daily lunch breaks will also offer interested attendees informal professional development sessions on enhancing LinkedIn profiles, improving public speaking skills, and integrating wellness into the workday.

We hope you'll join us in May as we come together as a community to learn from each other, engage in productive discourse, and enjoy good (virtual) company. The future will be shaped by our present actions, so let's work together to ensure we are set up for success for whatever the future holds.

See you online May 3–5!

https://www.councilscienceeditors.org/events/annual-meeting/cse-2021-annual-meeting/

Evidence of Esteem: Cultivating a Culture of Respect for Our Profession

Melissa B Schmidt

Throughout a career in STEM (science, technology, engineering, and math) journal management that has found me overseeing publications in 7 medical subspecialties, I have taken great pride and professional nourishment in developing an evidence-based approach to the management of journals across a spectrum that encompasses everything from best practices in peer review to 5-year budget projections. The expertise I've honed has come not just from experience, but also from research gleaned through policy documents issued by the World Association of Medical Editors (WAME),[1] recommendations made by the International Committee of Medical Journal Editors (ICMJE),[2] and of course, articles published in the pages of *Science Editor*.

But still—after 19 years—respect from editors (particularly those who hold a terminal medical degree) isn't always forthcoming.

Before I outline the ways in which I think we might work together to transform that somewhat discouraging reality, I'd like to briefly share with you how I came to write this article and why I feel a sense of urgency that we expand the level of support we are providing to one another on this front.

Once and Future Colleagues

I've had the recent privilege of joining a Council of Science Editors (CSE) task force on diversity, equity, and inclusion (DEI). One of our missions is to consider how we might attract candidates with different racial, ethnic, cultural, and gender perspectives to our profession. Another is to develop a course on DEI for journal editors and staff. In the course of casual conversation at one of our recent meetings, a task force member commented that it was important to properly train our editorial board members on DEI so that they can converse with authors about it, because doctors prefer to hear constructive feedback about their research from "an equal." We all laughed momentarily at the truism

MELISSA B SCHMIDT (0000-0001-5814-4099), M.Ed., is Director, *Journal of Osteopathic Medicine*.

and moved on. However, as the conversation continued, I found myself unsettled and asked my colleagues if we could return, at least momentarily, to discuss this idea that has proven endemic to our profession: the need to send in someone with an equivalent degree to the author's when discussing matters related to their research, even if those matters are editorial in nature. (If I had a nickel for each time I've told an editor-in-chief, "This author would take the news better coming from you," then drafted an email in my own words and asked for it to be sent over his [most often, his] signature, I'd be a rich woman.)

As we begin to consider how we can dedicate ourselves to expanding opportunities for new metaphorical voices in our profession to enrich our work, we are also obligated to consider how the power differential between those of us who operate the editorial office and those engaged in peer review might be magnified by intersectional politics. To be quite frank, we owe it to our current and future Black, Latinx, Asian, Indigenous, biracial, lesbian, gay, bisexual, transgender, and queer colleagues to mitigate—insofar as possible—an inherent paucity of respect for our role, so that it does not double (or triple) the work they must already do when they enter traditionally White, cisgendered spaces.

Imbalances of Power

With that hopeful charge in mind, I began to research how other colleagues have handled this. Of course, I Googled. I

CONTINUED

searched PubMed and the *Science Editor* archives. I called friends both inside our profession and those who work at academic institutions in other roles. What I found first was an overwhelming amount of information on "managing up" (and naturally, "leaning in"). But, since I've found myself so far writing a candid account, let me be so again: No amount of being pleasant to work with, anticipating and adjusting to your boss' communication style, cultivating "followership,"[3] or maintaining general professionalism[4] will neutralize the inherent power imbalance. As a deeply unfortunate op-ed in the *Wall Street Journal*[5] showed, those imbalances and biases exist even among those with terminal degrees. I currently manage an osteopathic medical publication, and we frequently discuss both patient and colleague biases against DOs (whose training is equivalent with MDs). Even amongst medical specialties there is a tacit hierarchy—and certainly, gender bias has been well-documented amongst academic medical faculty.[6]

Perceptions of Importance

As if gender or racial bias and education/degree bias weren't enough, there is a perception in some spheres that editorial offices (and the staff who operate them) are unnecessary or extraneous.[7,8] In a 2018 *Scholarly Kitchen* blog post entitled, "A Curious Blindness Among Peer Review Initiatives,"[7] Tim Vines noted, "The common refrain is that academics should take back control of peer review…which carries the heavy implication that journal staff and publishers add literally nothing to the process because volunteer reviewers and editors do all of the work." Seven years before, in a prescient blog post (also from *Scholarly Kitchen*),[8] Phil Davis opined about the launch of *eLife*, an Open Access journal that boasted at the time of employing no professional editors: "The tag line 'by scientists, for scientists' may seem familiar. It was used for years to promote Faculty of 1000 services. It evokes the revolutionary call to action to take back science and return it to its rightful place, which, if you've read your history of science, is in the hands of a small group of [W]hite aristocratic gentleman scholars. Professional editors may enter through the servants' entrance." (It should be noted that *eLife* now employs editorial office staff.[9]) Amongst you, my friends and colleagues reading this perspective article, are professional editors of the kind Mr Davis mentioned (both copyeditors and developmental editors, freelance and otherwise), editorial assistants and managing editors, experts in medicine, physics, life sciences, engineering, and more. Some of us consider ourselves editors in the truest sense of the word; some of us consider publication management our bailiwick. Regardless, the struggles are the same.

So what hope do we have for cultivating—*establishing*—a culture of respect from our authors and editors with advanced or terminal degrees who may consider us helpful but extraneous?

It might not surprise you to hear a medical editor propose this: our esteem is in the evidence.

Evidence-Based Editorial Management

Editors and authors often come to us with a great deal of proficiency in their subject area but little-to-none in publishing or peer review. That means that when it comes to the job of editing an article or managing a journal publication, *we* are the experts. Contrary to an assumption I've noticed amongst novice physician editors across my career, what we do is not nebulous, undefined, or opinion-based—it's precise, with its own set of best practices. This is subjective, of course, but they seem to think of their work as science and ours as art. Part of respect is understanding; to me, it is crucial that we help authors and editors understand that our profession is guided by a set of principles and processes just as theirs is. (This is one of the reasons training in publishing is critical for editors-in-chief, if not entire editorial boards, but that is a topic beyond the scope of this article.) Part of this mission will involve communicating amongst ourselves and gathering that knowledge in a single place for clear dissemination and free use by our colleagues—especially our young colleagues and the diverse candidates we hope to recruit to work alongside us.

To that end, I'd like to call for three things:

Confident communication support. First, I'd like to encourage CSE to consider expanding the training currently offered in certain short courses (specifically the Advanced Short Course on Publication Management) about communication confidence; it should feature more prominently in both that course and others for early-career employees. It's an important part of our profession and will help mitigate the anxiety some editorial office staff might feel when they are interacting with authors and editors. For equity purposes, a short, written, and free set of "tips" on confident communication, which would be accessible to colleagues at all levels, could also do wonders. During my research for this article, I consulted with Vicki Abelson, Certified Professional Coach and founder of The Defined Leader. She referred me back to "Crucial Conversations: Tools for Talking When Stakes Are High," a book I've had on my shelf for a decade. Vicki also suggested applying the following framework to conversations when we need to make confident assertions about editorial processes or ethics: "First, begin by sharing the facts. Tell your story—the story of why change is necessary. Put a focus on separating facts from stories; facts are the things we can see, hear, and observe, while stories are assumptions we make based on those facts. When data is absent, we make inferences (and often negative ones)." She also suggests focusing on mutual purpose, cultivating agreement with our authors and editors

CONTINUED

about shared goals and values (i.e., successful, accurate, timely, ethical publication of research). For our profession, facts and data are at the heart of *what* we publish, but they are also at the heart of best practices in *how* we publish. As one small example, there is a reason Clarivate strongly prefers a self-citation rate below 20% for journals indexed in the *Journal Citation Report*.[10] Armed with this data, young colleagues can confidently approach their editorial board members when decisions are being made about journal content that might violate that guideline, especially if the journal hasn't yet gained (but is applying for) an Impact Factor. Let's begin to collect and share data like that more freely.

Guides for best practices. Second and inextricable from the first, I call for CSE to develop a full complement of resource material to support best practices in publication management. While some information is available, of course—through our own organizations and others like WAME or ICMJE—it often relates to policies or codes of ethics for editors-in-chief or editorial boards, rather than covering the practicalities of how to set up and successfully run an editorial office. While we oversee publications in different subject areas, there are significant commonalities. *What's the best way to recruit new, active editorial board members when your board has become stale? What questions do you use on your reviewer form that help maximize rigorousness and thoroughness in their reviews? Further, how do you train new reviewers? What data do you use to identify high-impact articles and authors for solicitation? Is there a "best practice" for how to divide the work amongst employees in the editorial office?* Even when a journal has a professional publisher to lean on for production advice, running an editorial office requires a specific level of expertise in project management that necessitates an understanding of how certain decisions influence other areas of journal operations, so we must turn inward as we establish—again, based on evidence—our own guiding documents.

Salary and work environment research. Third, especially in light of our strong desire to recruit and retain more colleagues from more diverse backgrounds, I'd like to call for research *about our roles* to be shared amongst us. I happened into my first editorial role in 2002 through kismet rather than intention; I frankly wasn't even aware of scholarly journal work as a potential professional path. If we hope to recruit new members to our work, we must be able to share data with them about average salaries, the percentage of us who work with associations or societies and those of us who work in a publisher-employed or freelance model, how many of us who have additional degrees and certifications that benefit our editorial work, what our original undergraduate studies entailed, and more. In my opinion, our profession has suffered as a result of secrecy around this data, likely for the innocuous reason that we sometimes see ourselves as more disparate (because of the subjects we edit) than homogenous. I've been told that CSE is exploring the option of creating a task force through its professional development committee to conduct a salary study, and I look forward to progress on this front.

In short, DEI in editorial work is a worthy and necessary cause that cannot wait, and we are also simultaneously obligated to ensure that members of our profession—novice and expert alike—have the tools they need to command respect in a challenging environment. Isn't it time?

References and Links

1. World Association of Medical Editors Publication Ethics Committee. Recommendations on publication ethics policies for medical journals. [accessed February 24, 2021]. https://wame.org/recommendations-on-publication-ethics-policies-for-medical-journals.
2. International Committee of Medical Journal Editors website. Recommendations for the conduct, reporting, editing, and publication of scholarly work in medical journals. [accessed February 24, 2021]. http://www.icmje.org/recommendations/.
3. Duncan RD. Why managing up is a skill set you need. Forbes. May 26, 2018. [accessed February 24, 2021]. https://www.forbes.com/sites/rodgerdeanduncan/2018/05/26/why-managing-up-is-a-skillset-you-need/?sh=3329332a37fd.
4. Knight R. How to earn your manager's respect. Harvard Business Review. December 2, 1016. [accessed February 24, 2021]. https://hbr.org/2016/12/how-to-earn-your-managers-respect.
5. Epstein J. Is there a doctor in the White House? Not if you need an MD. Wall Street Journal. December 11, 2020. [accessed February 24, 2021]. https://www.wsj.com/articles/is-there-a-doctor-in-the-white-house-not-if-you-need-an-m-d-11607727380.
6. Ben-Assuli O, Kumar N, Arazy O, Shabtai I. The use of analytic hierarchy process for measuring the complexity of medical diagnosis. Health Informatics J. 2020;26(1):218–232. https://doi.org/10.1177/1460458218824708.
7. Vines T. A curious blindness among peer review initiatives. The Scholarly Kitchen. March 7, 2018. [accessed February 24, 2018]. https://scholarlykitchen.sspnet.org/2018/03/07/curious-blindness-among-peer-review-initiatives/.
8. Davis P. eLife: can a top-tier journal run without professional help? The Scholarly Kitchen. December 1, 2011. [accessed February 24, 2021]. https://scholarlykitchen.sspnet.org/2011/12/01/elife-can-a-top-tier-journal-run-without-professional-help/.
9. eLife. Executive staff. [accessed February 24, 2021]. https://elifesciences.org/about/people/staff.
10. Clarivate, Web of Science. Journal self-citation in the Journal Citation Reports—science edition (2002). [accessed February 24, 2021]. https://clarivate.com/webofsciencegroup/essays/journal-self-citation-jcr/#:~:text=The%20vast%20majority%20of%20categories,4%20journals%20to%20200%20journals.

Dr Leonard Jack, Jr: Preventing Chronic Disease Through Statistical Rigor

Anna Jester

As Editor-in-Chief of the Centers for Disease Control and Prevention's journal *Preventing Chronic Disease*, Dr Leonard Jack, Jr, PhD, MSc, knows that disseminating the best thinking and evidence around how to help people and communities prevent chronic diseases and promote health and wellness for all individuals around the world requires careful, rigorous peer review. A core component of this review at his journal involves a team of dedicated statistical reviewers who can thoroughly evaluate the complicated statistical analysis and methods underpinning the articles they publish. Recently, *Science Editor*'s Anna Jester spoke with Leonard about his creation of a statistics review committee, his path toward becoming an editor, and the importance of publishing science the public can trust.

Science Editor: Please tell us about your job and organization.

Leonard Jack, Jr: I have the privilege of working for The Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. I have been with CDC for 23 years and in my current capacity as Editor-in-Chief of the journal *Preventing Chronic Disease* (*PCD*) for four years. CDC is the leading science-based data-driven service organization committed to promoting the health of the nation. The CDC is rather large and I'm housed in the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) within the Office of Medicine and Science. As Editor-in-Chief, I have the responsibility of leading this peer-reviewed journal and ensuring the content we publish helps promote dialogue between researchers, evaluators, and practitioners while disseminating best practice around prevention of chronic diseases. The day-to-day work at the journal involves working closely with an esteemed editorial board, a talented mix of associate editors, and members of our statistics review committee. I'm responsible for making sure the scientific direction and editorial leadership are providing the most current relevant information to our readers.

ANNA JESTER is Vice President of Sales & Marketing at eJournalPress.

Science Editor: How did you get involved in scientific and scholarly publishing and what career path led to your current position?

Dr Jack: During my undergrad experience I was mentored by individuals implementing research in various areas, which allowed me to understand how research questions are formed. I also learned how research projects are created and developed, and the methods behind them. Then, it got to a very interesting phase of the work where it was important to write down and capture what was implemented and learned. I found an interest in how to create a story to talk about an implemented intervention to improve health in a way that brought the rigor of the discipline itself, as well as conveying information in a way that is believable, has a flow to it, and that individuals can understand. It was easier to implement the research but a little harder to determine how to best capture that. Early on, my mentors exposed me to expectations journals put in place that help authors understand how best to capture it based on the journal to which they were submitting. This introduced me to various journals and their expectations. A firm foundation meant that in graduate school, I built upon how to conduct good

CONTINUED

research, the importance of not just writing a story, but scientific writing, along with developing the skills to assess the quality of published research. I learned early on that just because a paper was published in a journal did not make it a strong paper or confirm it met the rigors of scientifically sound publication.

In my first job after finishing my PhD, that skill spilled over into all the things that I needed to do to get tenure. I had to write and publish, and acquiring those skillsets made me successful. As a result, I began receiving invitations to serve as a reviewer for journals. Serving as a reviewer, along with my own portfolio of research, resulted in invitations to serve as a guest editor for journals. When I took that on it increased my appetite for looking at a body of work generated by multiple authors and finding a way to make sure there was consistency, where necessary. Also creating a body of work that had one voice, ensuring papers in a guest issue met the rigors of the journal for which I served as a guest editor. I then received invitations to become an associate editor, and later an opportunity, prior to my tenure as Editor-in-Chief of *PCD*, to serve as Editor-in-Chief of a different journal. That role really brought all of my experience to bear and allowed me to provide an overarching demand of excellence for the journal. It also positioned me well for my current role. At the same time, I was developing myself as a researcher and respected evaluator. What I am doing now is well suited for me because I get the opportunity to work with individuals from a variety of different fields who are all interested in finding ways to convey their findings, research, or experience, which has been very rewarding.

Science Editor: Would you please tell us about *PCD*'s statistics review committee?

Dr Jack: When I first came on board, one of my observations was that we have an incredible mix of talent in our associate editors. I assign papers to them and they conduct their initial review determining whether a paper goes out for peer review. I noticed some of the papers we were receiving brought a higher level of statistical analysis and statistical methods, beyond what we were familiar with and received in the past. We began receiving feedback from peer reviewers who would indicate that while they had a strong sense of statistics, this paper would benefit from a level of review in terms of the statistical approach and analysis of findings at an even higher level. As a result, I determined we needed to create the infrastructure supporting that type of expertise so, when needed, we had it available. *PCD* formed our statistics review committee (SRC) to help us disseminate the best statistical methods and testing available in public health. We are not only assessing the rigor and accuracy of papers, but also making available to others a clear understanding around how the field itself, the application of statistics and methods, is advancing. Once published, it becomes a documented record of how to apply statistics in the most sound and appropriate way. We are also helping provide the field with information regarding the appropriateness of methods, statistical analysis, and how they can be aligned with a topic of interest. All of this is advancing the field itself in terms of statistics. The SRC includes almost 30 members who can share and provide a support system in terms of talking through statistical analyses on papers. It has become one of the major accomplishments for the journal and the quality of papers has improved. We have also reviewed papers that did not make it across the finish line because they were presenting findings that were not supported by complex statistical approaches or analysis presented in the paper. I have encouraged members of the SRC to remain firm. If you feel as though it's great, let us know. If you feel as though it's not, I want you to be honest and we will provide that information to the authors. Usually authors appreciate that level of rigor and as a result their papers are much better.

Science Editor: How are members on the SRC identified?

Dr Jack: Early on we spent time looking within our own database of peer reviewers, who identify their areas of expertise in the manuscript management system. I looked for peer reviewers who have self-identified an area of interest or expertise in statistics and economics. I analyzed whether or not they reviewed papers from that particular expertise and, if so, the quality and timeliness of those reviews. This provided a large pool of individuals I could narrow to a smaller pool of individuals, on whom I did my own homework to look at their work in the field. For those who made my cut, I sent communication explaining the creation of the SRC and indicating they would provide a huge benefit helping others improve the quality of their work. We do not offer the SRC an honorarium and these are individuals who are extremely busy and talented. What we are doing is making it reasonable. We will not ask members of the SRC to look at just any paper. We want them to look at the papers that genuinely require their high level of expertise. We will not ask them to review more than 2 papers per calendar year, making it a manageable time commitment. Our editorial board helps recommend individuals and the SRC often make recommendations for additional members as they are statisticians who know other statisticians. They now have up to 3 years of experience with the journal in this capacity and are able to share with others what the expectation is and how manageable we keep it.

Science Editor: What specific skills and abilities do members of the SRC bring to the journal?

Dr Jack: Skillsets we require must align with the journal's focus while presenting new insights in the field going forward.

CONTINUED

Our analysis indicated we needed individuals with expertise in conducting longitudinal data analysis, survival analysis, clinical trials, mediation analysis, and expertise in the use of statistical software. We want individuals familiar with the appropriate application of statistical software, providing confidence findings that were generated utilizing the correct application of statistical software. We also receive papers presenting data in a visual way, so we brought on individuals with expertise in data visualization. In these specific areas, statistics can be applied by individuals on the SRC who are also utilizing these different approaches (longitudinal data analysis, mediation analysis, etc.) on top of specific disease content areas such as diabetes, cardiovascular disease, maternal and child health, or reproductive health. Members on the committee have agreed to serve for 3–4 years. We connect the SRC once a year, and prior to COVID-19, we would bring them to CDC for face-to-face meetings. We also ask the SRC to help us update guidance we are offering authors. We provide insights regarding what can improve the chances of a successful paper, and we share examples of mistakes commonly made, including reporting data mistakes commonly made in tables and figures. The SRC's help refining those resources has been a tremendous resource and we believe they enjoy it.

Science Editor: What ways can *PCD*'s SRC serve as an example for other journals?

Dr Jack: The first thing that comes to mind is the SRC's successful implementation. The SRC serves as a valuable resource to me as the Editor-in-Chief, and to associate editors so they are not alone in trying to depend on feedback (or the absence of it) from peer reviewers. Unfortunately, papers are occasionally published that contain an error. It is important to have individuals such as SRC members available to help discern what that error is and where a mistake occurred to help facilitate conversations with authors regarding how to address it in the event data needs to be represented or published in an erratum. The SRC helps us provide that feedback. Having this kind of resource makes a journal feel more comfortable in what it publishes and making the names of members, and the expertise for each, available on our website conveys to readers, and the public, the journal takes this very seriously. *PCD* is a journal that is forever keeping the public's trust in mind. We also want to convey to authors they will receive a careful review, and when necessary, part of that review will be statistical assessment by the SRC.

Science Editor: What are some of the biggest changes you've seen in the industry and where do you see scientific editing and publishing heading?

Dr Jack: Some of the biggest challenges I've seen are likely to remain challenging moving forward. For years we have been talking about the relevance of journal impact factor. It is going to be important to continue rethinking that tool, originally aimed at helping librarians identify journal subscriptions useful to their patrons. We must open our minds regarding how we assess the impact of a paper on the merits of the paper, not on the journal in which it was published. It will be interesting to follow changes in publishing incentives and research assessment moving forward. Secondly, our journal receives a very large number of submissions each year and I know other journals also encounter this. There is a need to rely heavily on tools that help us to track and manage papers. Manuscript management systems are key, including built in artificial intelligence allowing us to identify inconsistencies between versions, duplications of papers, adding in a new author without declaring it, etc. We are using technology to help us monitor, generate reports, assess productivity, and evaluate the time taken managing a paper, and it only becomes more important to efficiently use these tools. Additionally, the complex need for statistical analysis of some papers journals are receiving has evolved to a place where there is a need for reviewing those papers differently. Bringing on qualified statistical reviewers requires a different way of thinking and recruiting. Also, while many of us have gotten better at what we do based on trial and error, and with varied experiences we can build upon, I hope to see even more formalized training to help people develop those skills in a more intentional way. How to interface with the public, now demanding greater transparency, is also evolving. There are certificate programs and graduate level training helping establish the foundation for doing the work before a person is put in a position to lead that work in real time. Lastly, there has been an exponential increase in the use of preprint servers, bringing some pros and some cons, some headaches and some breakthroughs. Posting articles before they are finalized is supplemented by posting research data sets and code, as well as supplemental material. The pressure to make information available has increased, especially when it is incredibly timely, or critical to move the field forward. I suggest we pause a bit and contemplate how well that has been going, evaluating what has occurred. In some examples it has not gone well. What can we learn from that?

The full interview with Leonard Jack Jr is available online at https://www.csescienceeditor.org/article/dr-leonard-jack-jr-preventing-chronic-disease-through-statistical-rigor/

José G Merino, MD: On the Little Decisions That Shape the Future

Patricia K Baskin

As the new Editor-in-Chief of *Neurology®*, the American Academy of Neurology's flagship journal, Dr José G Merino has quite a task ahead of him. Not only has he recently taken the helm of a weekly, international journal that typically receives over 7,000 submissions a year, but he's doing so in the middle of a pandemic that is rapidly changing how research and scientific discoveries are communicated. To see how he is managing this new position, *Science Editor's* Patricia K Baskin, Executive Editor of the *Neurology* Journals, recently spoke with Dr Merino about his dedication to solid, transparent research and reporting practices while trying to stay ahead of the many changes occurring in scientific publishing.

Science Editor: Tell us a bit about your position now and how it fits into the organization.

José Merino: Last Spring, I became the Editor-in-Chief of *Neurology*, the largest neurology journal, because it publishes the most papers in the field of neurology, anywhere in the world. We publish issues 48 times a year, almost every week. And, our reach is worldwide. Our authors and our editors and reviewers are international. My job really is coordinating the work of 8 associate editors in the different areas of neurology and a large journal staff that is able to handle the 7,500 submissions we received last year, along with coordinating peer review and dealing with any editorial issues or controversies that arise. I also oversee the 3 other journals that have spun off from the main journal, *Neurology: Clinical Practice, Neurology: Genetics,* and *Neurology: Neuroimmunology & Neuroinflammation*. Our society, the American Academy of Neurology (AAN), is the largest organization of neurologists, and we are probably the largest group of neurology journals in the world. Two of those are fully Open Access journals.

Science Editor: How did you get involved in scientific editing and publishing?

Dr Merino: I've always enjoyed reading and thinking about journals. Even as a medical student, I subscribed to them, and I spent a lot of time in the journal section of the library perusing them. I spent a lot of money making photocopies (more than I could read!). When I was a clinical fellow after completing my residency, my mentor became the editor of a major journal, *Stroke*, and started involving me. I eventually became a member of the editorial board and did some projects. Eventually, I became editor of the science section of the AAN website and wrote a blog for the *Stroke* journal. I wanted to become more involved and started looking for more editor opportunities. In 2012, I was alerted that *The BMJ* was looking for an editor based in the United States who was also a researcher. I applied for that position, and after I became a U.S. research editor for *The BMJ*, all my nonclinical time was devoted to medical editing.

I was able to do less research because of the increasing editorial work. At *The BMJ*, I was handling manuscripts and participating, and sometimes leading, the manuscript meetings where we made decisions about which articles to accept for the journal. I also had a large outreach effort, meeting authors and researchers throughout the United States to encourage them to submit work to *The BMJ*, and participated in the growth of initiatives such as patient partnership, particularly as it related to involvement of patients in the review process for research papers. This was a very fulfilling position, where I learned the details of what

PATRICIA K BASKIN, MS, is Executive Editor, *Neurology* Journals.

CONTINUED

being a medical journal editor is about. It prepared me for my current role as Editor-in-Chief of *Neurology*, where I can combine my editorial experience with my clinical and research passion, which is neurology. I decided to apply for it. It has been a very satisfying and fulfilling opportunity.

Science Editor: What do you enjoy most? What challenges are you facing?

Dr Merino: I enjoy the whole editorial process; that is, seeing a paper from when it's submitted through the whole peer review process, to all the edits, to a final product. But, I also enjoy very much the different challenges we face as editors when we have to deal with controversies and difficult issues of scientific fraud and misconduct and other issues of publication ethics. And then, being an editor also gives you a perch from which you can try to shape the future of the field as a whole. I enjoy that as well.

Science Editor: I'm sure, as you know, most editors are in a position to influence the field, and this year there's been the additional challenges with COVID-19. Can you describe how the epidemic affected the journal?

Dr Merino: When the epidemic began, we very quickly put out a call for papers that dealt with the neurological aspects of COVID-19. We've received an overwhelming number of papers in this area, as have many other journals. And, we've learned about the virus, the disease, and the challenges of curating the scientific literature during a pandemic. It has been a challenge because of the volume of manuscripts related to COVID that we have received, in addition to all the regular manuscripts that have been submitted. We had about 1,000 papers just related to COVID to appraise.

Although it put a strain on the editorial group and staff, it has been exciting in terms of seeing how the field has been developing. It's also been interesting how COVID has highlighted some of the new areas in medical publishing such as the role of preprints, including the value and the limitations of preprints. Preprints allow rapid dissemination of research and knowledge, but sometimes they include research findings that are preliminary or erroneous, have poorly described methods, etc. During this time, we also had the challenge of "science by press release," where some of the most relevant results of clinical trials and observational studies were announced via a press release and only days or weeks later, by a peer-reviewed manuscript. That can be confusing and frustrating.

Science Editor: What challenges did you see coming in as a new editor to a journal? And how would you like to put your mark on the journal?

Dr Merino: *Neurology* has always been a strong journal. It occupies a prominent position in the field, it has been well run and has solid editorial policies that promote transparency and clear reporting of medical research. These are some of the things that made the *Neurology* opportunity so attractive for me. I am fortunate that I did not have to start from zero, and I can modify what already existed. Every new editor comes in with a different view of how research should be presented, what type of research should be highlighted, what new areas, or maybe new sections to be developed, with different areas of emphasis. The COVID-19 pandemic actually has been a challenge because it has taken up so much time, so it's been difficult to make a lot of the changes that could have been done at the beginning of the tenure of a new editor.

I think that we're starting to see those changes—in terms of how manuscripts are processed. Some new sections are being developed to highlight some specific types of research. *Neurology* has also been leading in some of the issues regarding equity, diversity, and inclusion (EDI) in the material published. We're seeing that incorporated not only into the papers we publish and the type of language that's used, but also in terms of how EDI is represented on the editorial team and the editorial board. And, we have achieved gender parity in our editorial team and among members of our large editorial board. In those areas, we're making great strides as well.

Science Editor: Let's go back to your career aims and your thoughts about how you would talk to people who are not in your position. How would you describe what you do to someone without a science background or who doesn't really know much about scientific publishing? What's your elevator speech?

Dr Merino: Well, this is a challenging topic, because the first thing that people have to understand is that science doesn't move in a linear direction. Part of what scientists and clinical scientists do, the way we work, is to come up with a hypothesis, trying to test your ideas. And at the end, you have a result where your test was positive or negative, and that's what you're submitting to the journal. What a medical journal editor does is appraise the quality of the research as reported, going back to the original question: Is this relevant? Are the research methods adequate to address the questions? Can I trust the results or are these affected by systematic biases? How do these results contribute to our greater understanding of the field? If papers meet these criteria, the editor works with the authors to improve the reporting to make the paper the best possible reflection of the work, and to disseminate these results in a way that makes them accessible to the rest of the scientific community, clinicians taking care of patients, and patients who want to learn more about their condition and the options that they have.

CONTINUED

My day consists of making a lot of decisions. Do I send this paper for review, or do I reject it now? After receiving the reviews, should I send for revision or reject? Considering all the papers that we could publish, and the space limitations that we have, which papers should we accept? But then, there are other decisions like, what is going on the cover? What pictures should be there? Which articles should get a press release? It's making a series of little decisions all day. I think that would be one way of describing what editors do.

Science Editor: Besides the ability to make decisions quickly and firmly, what skills or abilities or other personal attributes have you found to be essential to success?

Dr Merino: You have to be curious and interested because sometimes papers deal with topics that you have not thought much about. You have to be able to see their intrinsic value and engage with them. This means that you can keep learning new things all the time. I also think you have to be patient and you have to like reading. You also have to enjoy editing: how can I improve this manuscript? And, you need to have a thick skin because inevitably some people will disagree with some of your decisions. You have to be able to feel satisfied that you made the best decision that you could, but at the same time you need to have the humility to recognize when you are wrong. I think that curiosity, patience, a thick skin, and humility are the attributes an editor needs to have.

Science Editor: If you hadn't pursued work in scientific publication, what might you be doing?

Dr Merino: Obviously, I would be working as a neurologist working on research in neurology, my area of acute stroke. And then, continue taking care of patients. I would just be spending more time doing that and less time doing an editor's job.

Science Editor: Is there something that would surprise readers about you that seems incongruous with being an editor?

Dr Merino: When I finished high school, I wanted to become an economist, not a physician.

Science Editor: What are some of the biggest changes you've seen in the industry and where do you see scientific editing and publishing heading?

Dr Merino: The years I was at *The BMJ* were very important because *The BMJ* has been at the forefront of many of the changes that have come to the field. One of the biggest changes is that preprints have become a big thing. It used to be that you could only read results through journals; now you can get results through preprints, in addition to trial registries. Another big change that should get even bigger is greater transparency, a push for better reporting, and better registration of studies, not just clinical trials. The other big change has been the ability to leverage the advantage of the electronic media in terms of being able to publish longer papers and being able to provide more data—the big push now is to have greater data sharing and data transparency. Open Access has become important, bringing a big change and challenges to the industry. Different publishing models may have different benefits for different audiences. And, another big change that I've seen in biomedical publishing is the rise of patient engagement in the publication of research and the production of research. I think that may end up changing how we report research in journals.

Confusing German *Eszett* (ß; ß) with Greek *beta* (β) in Biomedical Writing

Jaime A Teixeira da Silva

In scientific writing, there is a need to be as precise as possible. Non-English letters, such as from the Greek alphabet, are frequently used in biomedical research while mathematics uses an even wider range of symbols. In this note, the importance of not confusing the German special character, the Eszett *(uppercase ß; lowercase ß), with the lowercase Greek* beta *(β), is emphasized. Three examples are provided within the wider context of science's erroneous literature and the postpublication peer review movement.*

Science writing occasionally requires the use of non-English letters and special characters that can easily be confused, or mistaken. Academics from culturally diverse backgrounds may also have unique letters specific to their language's alphabet. Ideally, in science writing, there is a desire to represent both accurately.

In the German alphabet, there is a unique special character, the *Eszett* (uppercase ß; lowercase ß) that has specific orthographic uses. Except for German names (e.g., scientists or cities/locations in Germany) or other very specific uses exclusive to the German language, it is rare, if not altogether out of place, to use ß/ß in science writing.

In contrast, in Greek, lowercase *beta* (β), the second letter of the Greek alphabet, is commonly used in biomedical research, as are other Greek letters, e.g., names of compounds (β-carotene) or proteins (amyloid-beta, Aβ), in mathematics, or in statistics. However, the wrong letter might be used, i.e., instead of the Greek β, the German Greek β might be inserted. When the terms "beta" (or "β") are searched on PubMed, over 1.1 million results are returned[1] suggesting that authors, publishers, and platforms like PubMed allow for use of the alphabetized version of this Greek letter or the Greek letter itself.

German authors whose names are misrepresented with a Greek β are within their right to request an erratum from a journal to accurately represent their name in the scientific literature, or if the Greek β is erroneously represented as the German ß/ß, based on the premise that any error can and should be corrected, if possible.[2]

Some academics (or publishers) may argue that their computers do not have such letters, but most word processors globally have special character functions that allow these letters to be selected. Here, too, it is important to know which letter corresponds to which codes, and these are determined by a universal standard, the Unicode.[3] The Unicodes for the Greek β and the German ß and ß are U+03B2, U+1E9E, and U+00DF, respectively.

In a word processor, how can one capture the correct German or Greek letter? In Microsoft Word for Windows, especially in later versions, there is an input method editor pad that shows the Unicode for non-English letters and special characters. For example, as indicated above, the Unicode for the Greek β is U+03B2, uppercase German ß is U+1E9E, and lowercase ß is U+00DF. To find these letters in Word, simply add the Unicode where desired in the document, place the mouse cursor after the Unicode,[3] and then press Alt+x simultaneously. The desired letter should appear.

Three examples in which the Greek β and German ß/ß have been mixed and/or confused, and thus also introducing errors into PubMed, or other databases can be found in Muche et al.,[4] Pourageaud et al.,[5] and Camastra et al.[6] The greater risk is that these errors will be propagated by scientists who might cite this study, but who may be unaware of this fine-scale error. The extent of this type of error in the biomedical literature is currently unknown and a detailed bibliometric analysis is warranted.

Conflicts of Interest

The author declares no conflicts of interest relevant to this topic.

References and Links

1. https://pubmed.ncbi.nlm.nih.gov/?term=beta
2. Teixeira da Silva JA. An error is an error... is an erratum: the ethics of not correcting errors in the science literature. Publishing Res Quart 2016;32(3):220–226. https://doi.org/10.1007/s12109-016-9469-0.
3. http://www.unicode.org/charts/

JAIME A TEIXEIRA DA SILVA is an independent researcher in Kagawa-ken, Japan.

CONTINUED

4. Muche A, Arendt T, Schliebs R. Oxidative stress affects processing of amyloid precursor protein in vascular endothelial cells. PLoS ONE 2017;12(6):e0178127. https://doi.org/10.1371/journal.pone.0178127.
5. Pourageaud F, Leblais V, Bellance N, Marthan R, Muller B. Role of β2-adrenoceptors (ß-AR), but not ß1-, β3-AR and endothelial nitric oxide, in β-AR-mediated relaxation of rat intrapulmonary artery. Naunyn-Schmiedebergs Arch Pharmacol 2005;372(1):14–23. https://doi.org/10.1007/s00210-005-1082-2.
6. Camastra S, Vitali A, Anselmino M, Gastaldelli A, Bellini R, Berta R, Severi I, Baldi S, Astiarraga B, Barbatelli G, et al. Muscle and adipose tissue morphology, insulin sensitivity and beta-cell function in diabetic and nondiabetic obese patients: effects of bariatric surgery. Sci Rep 2017;7(1):9007. https://doi.org/10.1038/s41598-017-08444-6.

Common Unicode Characters in Scientific Writing

Unicode	Symbol/glyph	Unicode	Symbol/glyph
5E	circumflex accent ^	25A1	white square □
B0	degree sign °	25AB	white small square ▫
B1	plus-minus sign ±	25FB	white medium square □
B9	superscript one ¹	25FD	white medium small square ▫
B2	superscript two ²	2A7D	less-than or slanted equal to ⩽
B3	superscript three ³	2A7E	greater-than or slanted equal to ⩾
B5	micro sign μ	3B1	Greek small letter alpha α
D7	multiplicator sign ×	3B2	Greek small letter beta β
F7	division sign, obelus ÷	3B3	Greek small letter gamma γ
2012	figure dash –	3B4	Greek small letter delta δ
202F	non-breaking thin space for use with units	3B5	Greek small letter epsilon ε
207B	superscript minus ⁻	3B6	Greek small letter zeta ζ
2113	ell ℓ	3B7	Greek small letter eta η
2126	unit ohm Ω	3B8	Greek small letter theta θ
221A	square root √	3B9	Greek small letter iota ι
221B	cube root ∛	3BA	Greek small letter kappa κ
221C	fourth root ∜	3BB	Greek small letter lambda λ
221D	proportional to ∝	3BC	Greek small letter mu μ
221E	infinity ∞	3BD	Greek small letter nu ν
221F	right angle ∟	3BE	Greek small letter xi ξ
2220	angle ∠	3BF	Greek small letter omicron ο
2221	measured angle ∡	3C0	Greek small letter pi π,
2225	parallel to ∥	3C1	Greek small letter rho ρ
2229	intersection ∩	3C2	Greek small letter final sigma ς
222A	union ∪	3C3	Greek small letter sigma σ
2234	therefore; masonic abbreviation sign ∴	3C4	Greek small letter tau τ,
223F	sine wave, alternating current ∿	3C5	Greek small letter upsilon υ
2248	almost equal to, approximately ≈	3C6	Greek small letter phi φ
2282	subset of ⊂	3C7	Greek small letter chi χ
22C5	dot operator ⋅	3C8	Greek small letter psi ψ
2300	diameter sign ⌀	3C9	Greek small letter omega ω

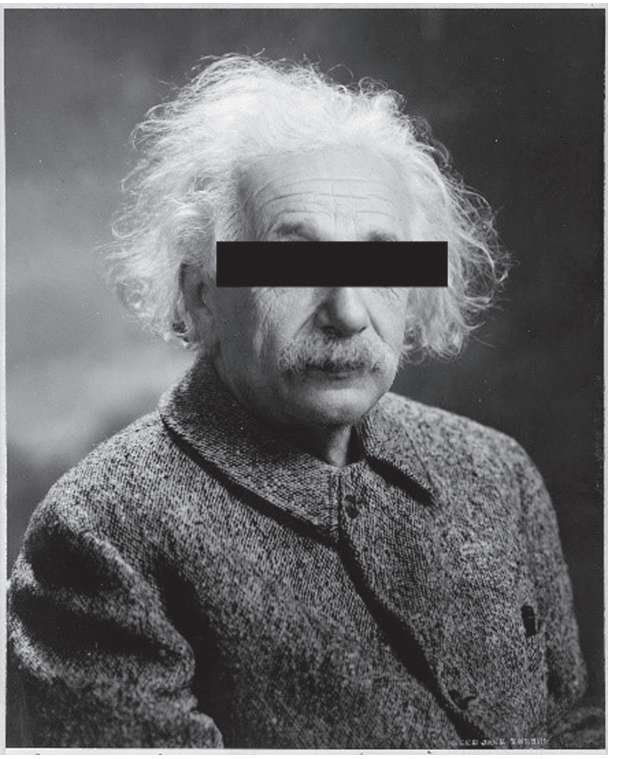
List via https://hamwaves.com/utf-8/en/index.html (CC-BY-NC-SA)

I Know That Guy: Balancing Confidentiality With Sharing Knowledge

Stacy L Christiansen

Some of you may remember a fashion magazine that ran a special feature called *Do's and Don'ts*. People unfortunate enough to be called out as a "don't" were wearing not only some hideous outfit, but they also sported a thin black bar over their eyes.

So what's the problem with that? Well the main thing is, those black bars don't protect identity. For example (and I am not condemning this fashion choice, by the way), how anonymous is the man in the image to the right?



Publishing Illustrative Content and Protecting Patients' Rights

Editors who work with clinical content, especially case reports, are familiar with the challenges of balancing patient confidentiality with the dissemination of important clinical information. Photographs are useful to show unique manifestations of a condition, to illustrate new techniques or procedures, and to help clinicians quickly visualize anatomic landmarks or other important details.

Until the late 1980s, placing black bars over the eyes in photographs was often accepted as a way to protect patient identity. However, some journals discontinued this practice when it became apparent that bars across the eyes do not preserve confidentiality. The International Committee of Medical Journal Editors recommendations on the protection of research participants notes that "masking the eye region in photographs of patients is inadequate protection of anonymity."[1]

But the risk of patient identifiability is not limited to black bars over the eyes. Individuals can be identified in photographs that may have been cropped to remove faces but reveal other identifying features (e.g., hair, scars, moles, tattoos, clothing).[2]

Another figure type that can be revealing is not pictorial—it's a pedigree. While pedigrees may not be as readily identifiable as a patient's face, they can pose a risk to patient (and family member) confidentiality, especially when rare diseases are described.

Figures are not the only concern. Patients have recognized descriptions of themselves in articles without accompanying photographs, just based on text descriptions (not only in clinical reports but also narratives) or demographic and clinical data in a table. And the need to protect patient identity also extends to multimedia, such as audio interviews or videos.

So What's an Editor to Do?

To protect a patient's right to privacy, nonessential identifying data (e.g., sex, age, race/ethnicity, occupation, and location of treatment) can be removed from a manuscript, unless clinically or epidemiologically relevant or important. However, omitting certain details may be problematic (e.g., age or occupation may be important to future epidemiologic investigations). More important, authors and editors should not alter or falsify details in case descriptions to secure anonymity because

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

CONTINUED

doing so may introduce false or inaccurate data into the medical literature.[2]

Photographic images can be cropped as long as important clinical information is not lost and no identifying details remain (e.g., jewelry, tattoos). Even seemingly insignificant characteristics can compromise patient confidentiality—it's not just that a patient's coworker or neighbor might recognize them; the threshold for identifiability is the individual person (i.e., if the patient can recognize themselves). In situations in which patient anonymity cannot be guaranteed, attempts to deidentify clinical photographs and related text description should be abandoned.[3]

The ideal approach, of course, is to have written permission from the patient (or parent/legal guardian in the case of minors) depicted or described for publication of their information. Such consent should include an opportunity for the patient to read the manuscript before publication or waive the right to do so. Many journals have their own consent forms that they require for this. Although institutions often obtain consent from patients to use such information obtained in a medical encounter or research for "educational purposes or publication," such consent does not always cover publication in journals or online.[2] When this permission is obtained, it should be noted in the published article.[1]

It may be tempting to get around these thorny issues by fabricating patients. However, authors should not "invent" patients and present these as actual cases. If a fictionalized or hypothetical case is presented for educational purposes, this should be indicated to readers as a "hypothetical case" or by providing a prominent disclaimer in the article.[2]

The bottom line: only those details essential for understanding and interpreting a specific report should be provided. Editors should carefully weigh patient confidentiality on a case-by-case basis, including decisions to remove extraneous detail or requests to authors to secure patient permission. The completion of a specific permission form for clinical photographs and other identifying material may seem like a burden, but it serves to protect the interests of all involved: patients, authors, and journals.

References and Links

1. International Committee of Medical Journal Editors. Protection of research participants. [accessed February 24, 2021]. http://www.icmje.org/recommendations/browse/roles-and-responsibilities/protection-of-research-participants.html.
2. American Medical Association (AMA). Consent for identifiable patients. In: Christiansen S, Iverson C, Flanagin A, et al, editors. AMA Manual of Style. 11th ed. Chicago, IL: AMA. [accessed March 9, 2021]. https://www.amamanualofstyle.com/view/10.1093/jama/9780190246556.001.0001/med-9780190246556-chapter-4-div2-150
3. Robinson JK, Bhatia AC, Callen JP. Protection of patients' right to privacy in clinical photographs, video, and detailed case descriptions. JAMA Dermatol. 2014;150(1):14–16. https://doi.org/10.1001/jamadermatol.2013.8605.

Putting Your Best Voice Forward: Considering Voice and Style in Your Social Media Posts

Jennifer Regala

Social media is a powerful tool. No matter how many followers one has or how many likes any given post receives, every message has an audience. And a post never goes away. Even a deleted post can be captured for posterity via screenshot. Why are the power and longevity of social media so important to consider? It is imperative for each one of us to think about how we want to appear to our social media followers. At work, we are careful to portray ourselves politely and professionally in meetings and emails. During a job interview, we don our best business garb, sit up straight, and talk clearly. *Social media should not be any different.* As easy as it is to sit behind a keyboard or phone screen and impulsively type a hot take to share with the world, I implore you to consider your voice, tone, and style just like you would if you were sitting in your organization's conference room to give an important presentation. We all have watched public figures fall quickly from favor after a tasteless post or photo. It only takes one misstep to lose years of hard-earned respect. This article is not intended to discourage you from using social media. By all means, use it, but use it well. Understand that you are not just sharing a private conversation with your best friend. You are sharing your thoughts with a much larger audience. It's up to you how you use that power, whether you have 10 followers or 10,000.

As more and more of us become involved in our organizations' social media, there is another layer to consider past our own individual presence on the Internet. The way an organization chooses to portray itself is most likely quite different from how its employees use their own social media. We will also discuss how to develop voice and style that are appropriate for your organization and mesh well with its missions and values.

And above all, I haven't forgotten that we are all editors. We all have strong feelings around apostrophes, "data is" vs. "data are," and the Oxford comma. Our social media accounts deserve this same level of passion, too.

JENNIFER REGALA is the Director of Publications/Executive Editor at the American Urological Association.

Personal but Professional

If you are using social media to communicate in your professional life, you want to consider how you are presenting yourself. For example, my personal Instagram is set to "private" and quite decidedly not professional. Before you think that my Instagram is a crazy and wild spot, it's not. Plus, I do allow former and current colleagues to follow me if I know them well. I just don't necessarily want the whole world to see me at the beach with my family, out to dinner with friends (in better times, of course), excessive pictures of my dog (who also has his own Instagram handle with his own distinct voice and style), and other little snippets of fun and chaos I share on that channel.

Because my professional social media presence belongs to me, I allow glimpses into my personality. On my professional Twitter handle, I state in my profile that I am "fluent in emoji." Only very rarely do I miss a chance to include at least one emoji in a tweet. In real life, I try my best to be kind, friendly, and personable, and I hope I do a good job of translating those efforts in my tweets. You'll also catch me posting pics of my dog, my kids every now and again, and my thoughts on topics such as virtual schooling, podcasts, and grammar annoyances. However, this professional account is not the place for me to just talk

CONTINUED

about me. That never has been, nor will be, my intent. I think very carefully about what I put on that account. Am I assisting in promoting authors and scientists I believe in? Am I sharing content about scholarly publishing that might help my colleagues? Am I lifting up and encouraging people and messages that really mean something? Am I amplifying the messages of my employer, the American Urological Association, and the important work we are doing in the urology community? These are the questions I ask myself before I hit SEND on that tweet. I also made a rule early on when I set up this professional Twitter that I would never delete a tweet of my own, which makes me put thought into the consequences of what I am about to say. I think of it as if I'm sitting in my office lunch room or mingling in the hallway at an industry conference. I'm happy to share a general outline of my life, husband, and kids, but I don't share *too* much. How would I feel if my boss or one of my editors or authors read my post? If that tummy test checks out okay, I proceed. Exception: I can't stop talking or posting when it comes to my dog Scotty. He's the most perfect dog in the world. Okay, back on track!

As for style, I have an internal style guide in my head. Oxford commas are always used. One emoji at the very least is necessary if the message is not too serious. Spell out numerals of nine or fewer. Don't abbreviate anything I don't believe my audience will know unless it's spelled out. And this last point may or may not be considered style, but I always remember my personal motto, "It's free to be nice and to comb your hair."

Your Organization Wants Your Input on Social Media. What Now?

More and more, social media is becoming an imperative part of the organizations we all represent. Scholarly publishing societies, associations, and vendors utilize a wide range of social media platforms to convey their messages. Many employ Facebook, Twitter, LinkedIn, Instagram, Pinterest, YouTube, and more. Organizations might choose just to communicate from the overall organizational level or to have multiple organizational handles across departments and journals. Social media is a quick way to convey important messages cheaply and effectively. Chances are that if you aren't involved already, you might be asked for your input or continued involvement in your organization's social media strategy. The first and most important items to address are voice and style.

Let's pretend that you are the managing editor of *The Journal of Awesomeness*. Until now, this journal never had a social media presence, but now your editorial board is clamoring for Facebook and Twitter accounts to promote the journal's authors, reviewers, and articles. After setting them up, it's time to develop voice and style for these new accounts. You wouldn't publish *The Journal of Awesomeness* without an air-tight style guide for its content. The same should be true for the journal's social media.

- Check in first with your organization to receive guidance on their expectations for these new accounts. Meet with anyone in your organization also handling social media responsibilities and ensure that your ideas for voice and style work with theirs.
- Meet with your editorial board, particularly your editor-in-chief, so you understand the direction the accounts should take.
- Reach out to well-known authors who have published multiple times in your journal. What do they want to see covered in posts?
- To start, come up with some easy-to-follow rules for posting. Will you post about every article the journal publishes? Will you ask authors for their input on posts? Will you include authors' handles in your posts?
- Perhaps you will come up with templates for posts at first. "These authors studied…" Or "The results of this study show…" are ideas for such templates.
- Then, once voice and style are established, just remember that these accounts will evolve and change. You'll figure out what resonates with your followers, and you will want to understand which posts receive the most likes and interactions.

Wait. I Still Don't Get It!

A lot goes into a social media presence, and you've got to start with the basics, which are voice and style. Building on that will take effort. Not one of us, even the "social media experts," really and truly get it. It's hard to predict what makes a viral post or which tweet will have the most interaction. Honestly, there is just way too much to understand. Pay attention and reach out to your colleagues and additional resources. CSE and other professional organizations offer webinars and related learning opportunities in this area. Start your own professional social media presence and follow scholarly journals and organizations similar to yours to watch not only how they handle their accounts now but how they change over time. Find people on your social media feeds that you'd like to learn more from and email them or reach out to talk more over virtual coffee. Please feel free to reach out to me at any time with questions, to discuss ideas, or to suggest topics for future columns. And don't be daunted by social media. Be excited about the many opportunities and advantages presented by social media!

Book Review: *Scholarship, Money, and Prose: Behind the Scenes at an Academic Journal*

Barbara Gastel

Scholarship, Money, and Prose: Behind the Scenes at an Academic Journal. Michael Chibnik. Philadelphia: University of Pennsylvania Press; 2020. 207 pages. ISBN 9780812252170.

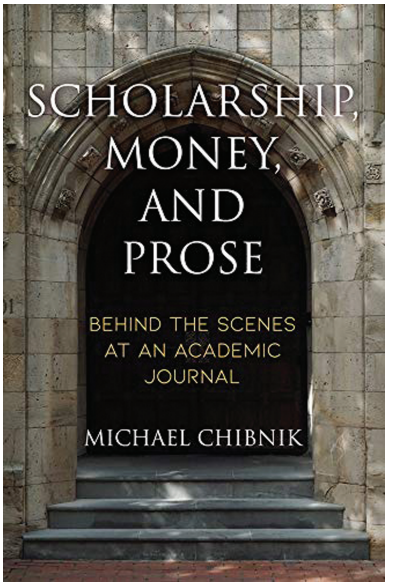
Many of us in science editing and related realms enjoy and benefit from seeing what others in our profession do. We can gain glimpses in this regard through periodicals such as *Science Editor,* events such as CSE annual meetings, and interactions such as CSE mentorships. Yet rarely do we have the luxury of a detailed look.

Scholarship, Money, and Prose: Behind the Scenes at an Academic Journal, by Michael Chibnik—now professor emeritus of anthropology at the University of Iowa—provides such a look. In this book, Chibnik contextualizes, recounts, and reflects on his experience as editor-in-chief of *American Anthropologist* (the flagship journal of the American Anthropological Association) from 2012 to 2016. The resulting mix of memoir and ethnography can appeal to and inform science editors, those they interact with professionally, and educated general readers.

The book consists mainly of a long introduction and a largely chronological set of 8 chapters. Derived in part from articles in *American Anthropologist* and *Anthropology News,* the chapters draw on Chibnik's perspective as a scholar whose specialties include the anthropology of work. Different chapters may especially interest different readers, and although the book is most meaningfully read as a whole, much can be gained from reading individual chapters.

Providing a foundation for the chapters that follow, the introduction includes basic information on academic journals and issues they face. It also describes the range of content in *American Anthropologist.* And, it notes that anthropology's diversity of subfields (sociocultural anthropology, archaeology, biological anthropology, and linguistic anthropology) complicates editing a journal in this field. The introduction also presents wise editor-selection advice from the previous editor

BARBARA GASTEL teaches science writing, science editing, and related subjects at Texas A&M University. She was editor of *Science Editor* from 2000 to 2010.



of the journal: Rather than concentrating on innovations that candidates propose bringing to the journal, seek "evidence of timeliness, strong organizational skills, and an ability to manage a heavy workflow without resorting to complaints and excuses." How true, how true.

Chapter 1 regards the history of *American Anthropologist.* Although this chapter provides useful context for what follows, it may interest journal historians and American Anthropological Association devotees more than it interests science editors. The chapter can, however, be easily skimmed.

In contrast, Chapter 2, on Chibnik's seeking and embarking on the editorship, may appeal more directly to prospective and current science editors. His accounts of his application and interview processes may aid candidates and search committee members. Also helpful are Chibnik's descriptions of how he enlisted a managing editor and editorial assistant, assembled an editorial board, appointed associate editors, and worked with the previous editor-in-chief to ensure a smooth transition. In keeping with the chapter's title, "A Lot to Learn," Chibnik also notes some surprises:

> *[During an initial meeting,] I did not pay all that much attention to the talk about metrics. This was a mistake. Both Wiley-Blackwell and the AAA were greatly concerned about these measures during my tenure as editor.*

CONTINUED

> *When I had thought about the AA editorship prior to my interview for the position, my main concern had been the journal's intellectual content. During the editorial transition, I learned that the administrative complexities and headaches associated with editing a major journal are comparable to those I had experienced when chairing a medium-sized anthropology department.*

Again, observations well worth remembering.

Chapters 3 and 4 focus, respectively, on the peer review process and Chibnik's decision-making about manuscript acceptance. Chibnik says that he generally had little difficulty obtaining peer reviewers and that most reviews were "constructive and helpful." Usefully, he includes the letter he sent to reviewers to guide them. He says he kept it largely the same as his predecessor's, but added a paragraph asking reviewers to comment on the clarity of the writing. He notes disappointedly that few reviewers did so and that, more generally, reviewers seemed to neglect the letter.

Chibnik characterizes decision-making about manuscript acceptance as "the most interesting and time-consuming of [his] many journal-related tasks." Helpfully, he includes anonymized excerpts from manuscript decision letters suggesting improvements. Also, he notes that nearly all articles published in the journal received revise-and-resubmit decisions initially, and that rejections usually resulted from multiple problems, few of which alone would cause rejection. These points, applicable to many journals, may benefit authors to know.

Chapter 5 regards attempts by Chibnik—who terms himself "psychologically incapable of ignoring horrendous prose"—to make *American Anthropologist* more readable. This chapter, too, includes helpful excerpts from decision letters. Chibnik mentions that when manuscripts had promising content but poor writing, he recommended that the authors enlist professional copy editors. He ends the chapter ends by stating, "Although the work we did on writing was invisible to readers, I regard it as being among our most important tasks." Manuscript editors reading the chapter are likely to cheer.

Like many association publications, *American Anthropologist* includes both peer-reviewed research articles and magazine-type features, such as columns, essays, obituaries, and book reviews. Thus, Chapter 6 focuses on Chibnik's work regarding *American Anthropologist* as a magazine. It devotes considerable space to the periodical's book review section, which contained many reviews, given books' importance in anthropology. This chapter may especially interest editors of other association periodicals (including *Science Editor*) that combine peer-reviewed research content and other material to serve a broad readership.

Editors of association periodicals also may especially relate to chapter 7, which concerns *American Anthropologist* as a business. The chapter includes sections on economics, metrics, production, and open access. Chibnik's accounts of his interactions with the parent association, the publishing company, and others in these regards may be enlightening, if sometimes disheartening.

Finally, Chapter 8 regards the end of Chibnik's editorship. Chibnik notes that he especially liked reading manuscripts and working with authors but was less enthusiastic about some other aspects of his role. Among closing lessons he conveys are the following: When choosing associate editors and others to work with, consider not only ability but also collegiality. Be "both tactful and persistent" in pursuing one's goals as a journal editor. And do not worry excessively about matters beyond one's control.

Scholarship, Money, and Prose provides a valuable inside look at journal editing. As well as summarizing common procedures and issues, it offers specific examples of an editor's reasoning, problem-solving, decision-making, and communication. In keeping with Chibnik's emphasis on readability, the book also is clearly written. Reading it resembles shadowing a journal editor.

Two slight cavils: In places, indented extracts that seemed at first to be single examples turned out to be multiple ones; skipping lines between the examples or otherwise distinguishing them might have helped avoid confusion. Also, Chibnik, who writes that little has been published describing what journal editors do, seems unaware of the science editing literature and science editing organizations. Resources that might have been worth mentioning—and might have aided Chibnik—include articles in *Science Editor* and *European Science Editing*, classic books such as Claude T. Bishop's *How to Edit a Scientific Journal*[1] and Peter Morgan's *An Insider's Guide for Medical Authors and Editors*,[2] the CSE Short Course for Journal Editors, and CSE annual meetings. Maybe CSE should reach out more to editors in anthropology and other social sciences.

Despite its minor limitations, *Scholarship, Money, and Prose* has much to offer. Although, as Chibnik says, much of the content may be familiar to other editors, reading about counterparts' experience can be engaging and instructive, especially to those new to the field. The book, or parts thereof, also may interest others who work in scholarly publishing, authors who submit their writing to journals, and members of the public who may wonder what journal editors do. Rightly, Chibnik calls for more accounts of this type. May their authors emulate Chibnik's anthropological eye and clear voice.

References and Links

1. Bishop CT. How to edit a scientific journal. Philadelphia (PA): ISI Press; 1984.
2. Morgan P. An insider's guide for medical authors and editors. Philadelphia (PA): ISI Press; 1986.

Gatherings of an Infovore*: What's Next?

Barbara Meyers Ford

Whether the "new normal" will become our "forever normal" over the next year or two is starting to be examined by researchers and professionals across the spectrum of human endeavor. There is no argument that life on Earth as we knew it is now truly ever-changing. The French saying *Plus les choses changent, plus elles restent les mêmes* may finally be put to the test.

The specific idea for this column came from a report issued in November 2020 by Cactus Communications entitled "Imaging the Post-COVID World of Scholarly Communication." Authored by senior staff of the various Cactus companies and divisions, it is a thoughtful look at discrete areas concerning publishers. Starting with transforming workflows through discovering revenue streams to incorporating virtual approaches and evolving operating models, they explore the current state of technologies and extrapolate how these will affect our near-term future. You can download the entire report here: https://cactusglobal.com/downloads/imagining-the-post-covid-world-of-scholarly-communication.pdf

Scholarly publishing in the wake of COVID-19
Miller RC, Tsai CJ. Int J Radiol Oncol Biol Phys. 2020;108(2): 491–495.
https://doi.org/10.1016/j.ijrobp.2020.06.048

Scientific globalism during a global crisis: research collaboration and open access publications on COVID-19
Lee JJ, Haupt JP. High Educ. 2020.
https://link.springer.com/article/10.1007/s10734-020-00589-0

Micropublishing during and after the COVID-19 era
Yamada Y. Collabra: Psychol. 2020;6(1):36.
https://doi.org/10.1525/collabra.370

Editorial—embracing how scholarly publishing can build a new research culture, post-COVID-19
Derrick GE. Publications 2020;8(2):26.
https://doi.org/10.3390/publications8020026

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

Open-access publishing and the coronavirus
Grove J. Times Higher Education. 2020.
https://www.insidehighered.com/news/2020/05/15/coronavirus-may-be-encouraging-publishers-pursue-open-access

Covid-19 is an opportunity for gender equality within the workplace and at home
Wenham C, Smith J, Morgan R. BMJ. 2020;369:m1546
https://doi.org/10.1136/bmj.m1546

Publisher Actions
The following is a list of actions taken during the pandemic. Some may become the basis of publishers' actions in the future.

What publishers are doing to help during the coronavirus pandemic
Association of American Publishers. 2021.
https://publishers.org/aap-news/covid-19-response/

CONTINUED

Below is a partial list of industry actions, which will be regularly updated at the above URL:

- https://www.cambridge.org/us/academic/covid-19-resources-and-information (Cambridge University Press)
- https://www.macmillanlearning.com/college/us/content/covid19 (Macmillan Learning)
- https://www.mheducation.com/ideas/announcements/mcgraw-hill-supporting-schools-and-learners-covid19 (McGraw Hill)
- https://academic.oup.com/journals/pages/coronavirus (Oxford University Press)
- https://www.pearson.com/news-and-research/working-learning-online-during-pandemic.html (Pearson)
- https://www.pearson.com/news-and-research/announcements/2020/03/pearson-uses-global-reach-to-provide-learning-tools--expertise-f.html (Pearson uses global reach to provide learning tools, expertise for those affected by pandemic)
- https://press.princeton.edu/news/princeton-university-press-digital-content (Princeton University Press)
- https://us.sagepub.com/en-us/nam/press/sage-publishing-statement-on-the-covid-19-pandemic (SAGE)
- https://classroommagazines.scholastic.com/support/learnathome.html (Scholastic's Learn-At-Home)
- https://www.teachercreatedmaterials.com/teachers/free-home-learning/ (Teacher Created Materials)
- https://wwnorton.com/covid19 (W. W. Norton)
- https://newsroom.wiley.com/press-release/all-corporate-news/wiley-opens-access-support-educators-researchers-professionals-amid (Wiley)

In closing, I want to share some thoughts from Susan Robertson at Cambridge University, UK:

"As Phillip Mirowski once said; never let a good crisis go to waste. What can we do better when using digital technologies, mindful of also generating benefits like lowering our carbon footprint? What do we still need to do in-person, but in ways that are respectful of our right to social distance? And how can we hold on to the social, so that it finds expression not in the idea of distancing, but in creative ways of being together?"

Susan's words are from her contribution "University life in Cambridge in the two meter society" to *Reimagining the new pedagogical possibilities for universities post-Covid-19: an EPAT Collective project* (https://www.tandfonline.com/doi/full/10.1080/00131857.2020.1777655).

Barbara Meyers Ford has retired after a 45-year career in scholarly communications working with companies, associations/societies, and university presses in the areas of publishing, and research. If interested in connecting find her at www.linkedin.com/in/barbarameyersford and mention that you are a reader of *Science Editor*.

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

(The STM Report, Fourth Edition)

How are you standing out?

Aptara provides innovation that will help set you apart from the rest.

- Automate your page charge collection process
- Research market presence of competing journals
- Process and tag your video content for a consistent display, test-to-speech functionality and searchability.
- Automate the production of your Abstracts and Conference Proceedings into XML, PDF, Responsive HTML and EPUB3

APTARA

www.aptaracorp.com

Council of Science Editors
355 Lexington Ave. 15th Floor
New York, NY 10017