

SCIENCE EDITOR



A PUBLICATION OF THE COUNCIL OF SCIENCE EDITORS

IN THIS ISSUE:

STUDENT-RUN ACADEMIC JOURNALS IN STEM
THE MORE THINGS CHANGE, THE MORE THEY STAY THE SAME
BOOK REVIEW: *EMPEROR OF ALL MALADIES*

PUBLISHING

IN THE CHANGING CLIMATE OF
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VIEWPOINT

- 126** Science Editor Since the 70s: When Looking Back Helps Us Look Forward Tracey A DePellegrin

ARTICLES

- 128** The More Things Change, the More They Stay the Same Dan Moran
- 130** Student-Run Academic Journals in STEM: A Growing Trend in Scholarly Communication Kelvin Ng, Mohammad Hossein Asadi Lari, Sze Wah Samuel Chan, Rahul Krishan Arora, Farah Qaiser Vassi Sharlandjieva, and Sacha Noukhovich

FEATURES

- 136** Hiring and Training Copy Editors for Scholarly Publishing Jessica LaPointe
- 138** The Future is Here: Scientific Publishing Predictions Come True Lindy Gervin

ANNUAL MEETING REPORTS

- 139** Life of a Paper: Beyond the Manuscript Carolyn deCourt
- 141** How to Maintain and Update Outdated House Style Resa Roth
- 144** JATS & BITS: Facilitating the Flow and Preservation of Science Tony Alves
- 146** Short Course for Manuscript Editors Resa Roth
- 150** Word Tips for Editors Resa Roth

DEPARTMENTS

- 151** Scholarly Publishing Developments to Watch Tim Cross
- 153** On Location, It's a Take! Colleen M Sauber
- 155** Gatherings of an Infovore Barbara Myers Ford
- 157** Enrolling Brazilian Editors in CSE's Certificate Program: A Successful Initiative Bruna Erlandsson
- 160** Book Review: *The Emperor of All Maladies: A Biography of Cancer* Carolyn deCourt

On the cover: Cables rise above the San Francisco-Oakland Bay Bridge on its opening day Monday, September 2, 2013, in San Francisco, California. Photo by Noah Berger, Noah Berger Photography.



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Science Editor Since the 70s: When Looking Back Helps Us Look Forward

Tracey A DePellegrin

Some may say that the first incarnation of *Science Editor* started in 1959 with the Council of Biology Editors (CBE) publication *CBE Newsletter*, edited by Fred R. Cagle, which was mimeographed (look that one up!) and stapled. *CBE Views* (1978–1999) represented a more modern approach, and just one year after it started, in 1979, Evelyn S. Myers became the first woman Editor—21 years after *CBE Newsletter*'s first appearance. Barbara Gastel was Editor both of *CBE Newsletter* (1998–1999) and *Science Editor* (2000–2010), and has long been a valuable contributor of ideas, leadership, and content. We're fortunate that Barbara remains an editorial board member.

As *Science Editor* heads into more than 40 years of publishing since *CBE Views* started, it's fun to consider what we've learned and how this might inform what's next. We had originally thought about publishing a single anniversary issue. The editorial board first discussed, and then agreed on peppering the next year of *Science Editor* with text and image excerpts from past articles, reflections on scientific publishing over the years, and other items that provide not just a historical perspective, but also an idea of what possibilities exist in the future. In reading these excerpts, we hope you'll enjoy and learn from our colleagues past and present, and find the common threads that join us regardless of whether it's 2018 or 1978.

CSE has digitized most of its *CBE Views* and *Science Editor* issues starting with the January/February 1997, Vol. 20, No. 1 (<https://www.councilscienceeditors.org/publications/science-editor/1997-vol-20-cbe-views/jan-feb-1997-vol-20-no-1/>). I encourage you to spend some time browsing the treasure trove of our archive, as I'm certain you'll find articles that are interesting, useful, fun, and (often) still relevant.

In the January/February 1997 issue (Vol. 20, No. 1) a group of articles in a section called Dialogue tackles



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the challenges that were found as publishers and editors started to use electronic manuscript submission systems and email in manuscript handling. The titles reflect concerns over email and system security, as well as attempts to put risk into perspective. "Is E-mail Sufficiently Secure for Scientific Journals," "Security and Document Compatibility for Electronic Refereeing," "Security: So What's the Big Deal?" and "E-mail: An Expedient or Impractical Method for Reviewing Manuscripts?".

Below are some interesting excerpts from other past issues:

- "Panelists agreed that although sometimes justified, salami science more often than not wastes valuable resources and distorts the truth, is never acceptable in the pharmaceutical industry, and should be discouraged" (p. 200).

November/December 1998 (Vol. 21, No. 6): "Annual Meeting Report: Salami Science: Are We Still Allowing It?" (<https://www.councilscienceeditors.org/wp-content/uploads/v21n6p200.pdf>)

- "To appreciate the speed of change we now encounter, we need to stop and take a breath. We must recognize that in just 3 decades, a mere 30 years of the nearly 4500

TRACEY A DEPELLEGRIN is Editor-in-Chief of *Science Editor* and Executive Editor, Genetics Society of America Journals and Executive Director, Genetics Society of America.

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since papyrus was used in 2400 BC, we have moved from a world of merely atoms (the single medium based on a paper format) to a world of atoms and bits. Our current age embraces many media—paper, digital, audio, video—and who knows what's next and when?" (p. 168).

"As they begin to join to manage change, publishers, editors, librarians, booksellers, subscription agents, and aggregators all recognize the need for a 'duality of print and electronic products' for the foreseeable future. How many years the 'foreseeable future' covers is debatable. Many of us expect it to span the remainder of our careers" (p. 169)

"We had less than 2 years of warning before the World Wide Web altered our view of the world, how we communicate with each other, and how we go about retrieving information. Are you ready for the next change? It may come tomorrow" (p. 169).

September/October 2002 (Vol. 25, No. 5): "Ch-ch-changin'" (<https://www.councilscienceeditors.org/wp-content/uploads/v25n5p168-170.pdf>)

- "The World Wide Web is truly a powerful tool for communicating science and scientific research data, but it is a web, a tangled one, that can quickly consume writing, editing, graphics, and information-technology resources" (p. 84)

May/June 2008 (Vol. 31, No. 3): "Evaluating the Effectiveness of Scientific Material Published on the Web" (<https://www.councilscienceeditors.org/wp-content/uploads/v31n3p083-084.pdf>)

Back to the current *Science Editor* issue, "The More Things Change, the More They Stay the Same" by Dan Moran, Publishing Services Group Leader, Sheridan Journal Service, illustrates an age-old wisdom we often hear applied across myriad facets of life and work. Dan argues that, regardless of the latest technology, the basic tenets of scientific publishing and the importance of peer review hold fast.

Speaking of new developments, scholarly journals run by high school, undergraduate, and graduate students in STEM are on the rise. In their paper published in this issue, Ng and colleagues illustrate that these publications represent critical opportunities for preparing early-career scientists to more effectively read the literature as well as to communicate their research. The authors discuss the challenges of student-run journals, and suggest ways to mitigate these issues.

Colleen Sauber gives us a glimpse into Alec Tremaine Photography and Alec's work at CSE's Annual Conferences in 2016 and 2017. CSE provided attendees with an opportunity to work with Alec and to obtain professional headshots at a discounted price.

Looking for some interesting reading? Carolyn deCourt, Managing Editor & Marketing Assistant at J&J Editorial, writes a book review of *The Emperor of All Maladies: A Biography of Cancer* by Siddhartha Mukherjee. Mukherjee, well known for his accessible science writing, tackles cancer in a compelling read that draws the reader in and leaves her with a lot to ponder.

Annual meeting reports covered in this issue include sessions on Attracting New Authors, Peer Review Innovation, JATS & BITS, and more.

Finally, we would like to publish images that show scientific editing and publishing in action or represent your domain areas or scholarly society. If you have such an image and the requisite permissions and you're interested in publishing the photograph, graphic, or drawing in *Science Editor*, please submit a high-resolution image and caption to scienceeditor@councilscienceeditors.org.

Further Reading

- Gastel B. A new name and a new design. *Sci. Ed.*, 2000; 23(1):2. Available from: <https://www.councilscienceeditors.org/wp-content/uploads/v23n1p002.pdf>
- Tacker MM. CBE Views: A look back. *Sci. Ed.*, 2000;23(1):3–7. Available from: <https://www.councilscienceeditors.org/wp-content/uploads/v23n1p003-007.pdf>

The More Things Change, the More They Stay the Same

Dan Moran

“Technology gets better every day, and that’s fine, but most of the time all you need is a stick of gum, a pocket knife, and a smile.”

—Nathan Muir (Robert Redford), *Spy Game*

With just about 20 years of experience in STM publishing, some would say I’m still somewhat new to the industry. I fell into the business in the late 1990s, at age 27, having had 15 previous jobs completely unrelated to publishing (with an M.A. in Philosophy and Religion, I had a number of minimum-wage warehouse jobs). However, I’ve now been around long enough to have seen major advances in technology that have drastically changed the logistics and parameters of the STM publishing process. In spite of those world-altering developments, though, I’ve also noticed that many aspects of the job haven’t changed at all.

When I greet new colleagues who have been hired just after graduating from college, I often astonish them when I mention that during my first year with the company, I didn’t use a computer at all. Their stunned reactions seem to pose the question: “How did you manage to *do* anything?” For these employees who were born after the Internet was reasonably prevalent in American households, it’s difficult to imagine that my desk featured pencils, markers, various stamps and ink pads, Wite-Out, piles of paper, and multiple lamps bent low over slanted wooden boards. What my desk did *not* feature was a keyboard or monitor.

These days, of course, my workplace looks completely different. A stroll through the office reveals desk after desk with nothing but computer monitors on the surfaces (and often not just one monitor but two monitors per person). Scraps of paper are nowhere to be seen, scissors and tape would take an hour to dig up, and even pens and pencils might be hard to find.

Still, when I reflect upon what’s happened in my workplace over the last two decades, I find the changes more quantitative than qualitative. As a production editor for a company that serves numerous scholarly and professional societies, my overall tasks now are much the same as they were during the Clinton administration.

DAN MORAN is the Publishing Services Group Leader at Sheridan Journal Services

Our company receives manuscripts from peer-review departments at various organizations, and we shepherd those manuscripts through editing, typesetting, author revisions, and customer revisions, ultimately supplying the final publication product. During my decades of doing this kind of work, numerous individuals and groups have been striving to alter the logistics of various stages of the process. Sometimes the changes have been driven by the desire for greater speed, sometimes by the yearning for lower costs, and sometimes by a vague notion of “improving” the experiences of authors, publishers, or other stakeholders. Certain efficiencies have been gained, some people are happier with the newer methods, and in many cases, new problems have been introduced. Fundamentally, though, we’re still dealing with the same players, the same stages, the same ultimate goal.

For example, we want authors to see the initial typeset versions of their articles, to review edits and answer questions, and to be able to make revisions. I previously sent printed copies of typeset articles to authors, using regular mail or some expedited method if the need was urgent. Queries were handwritten on the printed pages, and the authors replied by writing out answers in addition to marking revisions in pen or pencil to printed sections of text, after which they returned these pages by mail (or, in some cases, by fax). Now, we send such typeset proofs in electronic form, by means of email, with instructions and queries embedded within the messages or the files. The authors may annotate PDFs with revisions, or they may send us descriptions of revisions in the text of emails; they may use an online portal to upload revised proofs, or they may return them as attachments. The logistics have changed considerably. Overall, though, this step of the process hasn’t much changed. If an author’s on vacation and hasn’t designated a coauthor as the next contact in line, it doesn’t much matter whether we send an email or drop off a package on a doorstep. If an author doesn’t understand—or answer—one or more queries, further contact and discussion are needed, whether by email, “snail” mail, or telephone. If an author wants to make changes that violate the style or policies of the publication, the society must be consulted, regardless of what technologies are used. Yes, electronic methods of sending author proofs have reduced some of the time that would otherwise be taken up by the delivery of hard copy, and the cost of the postage has been cut out as well (though other costs are associated with using and maintaining the necessary technologies for

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electronic methods of transmission), but this basic stage of publishing has remained in place, along with many of its problems.

The same can be said for many other stages of scientific, technologic, and medical (STM) publishing. We used to receive peer-reviewed manuscripts as typewritten pages in the mail, and now we receive them in electronic form, in many cases through online portals—but we still have to take steps to resolve questions that arise if something appears incorrect or incomplete. We used to check “blues” (the last stage before a journal prints) in the form of stapled signatures of chemical-laden, foul-smelling physical pages, and now we check them via an online application—but we still have to review the final pages just before they print. Whatever the stage of journal production, we’re doing the same things, only in a different way. The “new and improved” technologies have not changed any of the basic facts of the publishing process.

The “new and improved” technologies have not changed any of the basic facts of the publishing process.

Another aspect to keep in mind is that, at least in this business, technologies do not change suddenly but with slow periods of transition. It wasn’t as though we abandoned paper manuscripts and proofs altogether on a given day and switched to entirely electronic systems. Rather, we began to deal with electronic submissions and transmissions gradually while paper was still in use. A given technology might be tried for certain stages of publishing but not yet others. Authors were given the option to include email addresses along with their correspondence information, and for most organizations, this continued for years before the email address became a requirement. The transitions often involved strange mixtures of methods; for example, when we first began using electronic manuscripts, we received them as files on floppy disks—in effect, digital files were being sent through the mail.

It’s also important to remember that technologies do not advance at an even pace across all stakeholders involved in publishing. Just because Microsoft comes out with a new version of Word, that doesn’t mean any given author or society immediately runs out to purchase it. Societies and individuals have varying budgets and preferences and may be many years behind the cutting edge of technology. Those working in the technology industry may consider as “obsolete” anything older than a year or two, but some STM authors in developing countries may be using computers that are 15 or 20 years old, or they may have access only to

dial-up Internet services (if any). Even first-world authors with excellent funding may not have a great deal of experience with certain technologies. I’ve dealt with many authors who are likely excellent surgeons but who nevertheless can’t seem to open a PDF, much less annotate one. I also know of at least one major American medical society whose editors revised files by printing them out, marking them in pen, scanning in the pages, and returning the electronic scans to us—as recently as 2015. Everyone in this business would do well to keep alive the older methods when adopting newer ones.

Anyone in this business would do well to keep alive the older methods when adopting newer ones.

I think the only qualitative change to STM publishing brought about by technological advances is the ease of distributing text widely and quickly. That is, authors can now skip the process of official submission and peer review and simply post their articles directly online in any number of venues. The ease of self-distribution of content, along with the rise of questionable and predatory publications—the scholarly equivalent of “fake news,” facilitated by the Internet—has had an effect on our industry and may continue to exert influence. For more discerning professionals and researchers, however, I think peer-reviewed publications run by official organizations will continue to be the authoritative sources of new and relevant information.

It may be difficult to envision the technological changes to come in subsequent decades, but regardless of what they turn out to be, I think STM publishing will remain much the same in its essentials. Even if author proofs somehow become five-dimensional holograms through which one walks and revises by grabbing at the air, it won’t fundamentally be any different than marking pieces of paper with a red pencil. We know authors and researchers will continue to document their work and to want to share it with others in the field; we know societies and other professional organizations will be involved in this process; we know work will have to be edited (for readability, for accuracy, for style), revised, and put into some recognizably standard form; we know various stakeholders will need to weigh in at various points along the way; we know all of this will happen with regularity and in keeping with a certain schedule; and we know the people and vendors involved will need help and expertise to ensure all this is done. As long as rigorous standards continue to prevail and discerning audiences demand the highest-quality STM content, the basic processes of STM publishing will remain largely intact. We may not know how things will change, but we can feel reasonably sure about what will stay the same.

Student-Run Academic Journals in STEM: A Growing Trend in Scholarly Communication

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Mohammad Hossein Asadi Lari
Sze Wah Samuel Chan
Rahul Krishan Arora
Farah Qaiser
Vassi Sharlandjieva
Sacha Noukhovich

Abstract

Student-run academic journals that publish high school, undergraduate, and graduate scholarly research are a growing trend in scholarly communication. These journals have the potential to improve the quality of future publications and editing by engaging students with the peer-review process and critical appraisal early in their professional careers. The number of student-run journals increased 9.9-fold from 1995 to 2015 and is projected to reach 222 by 2020. A mixed-methods Google Forms survey with 44 questions regarding journal structure, review methods, and journal management was distributed to 122 North American student-run journals. The survey received 29 responses for a 24% response rate. The majority of journals focused on expanding within their respective institutions to engage students: 80% of the journals' mission statements included promoting student research or encouraging student publication. Despite recent growth, a large percentage of journals cited challenges, including gathering manuscripts (65%), recruiting reviewers (42%), and transitioning managers (38%). Interestingly,

only 33% of interinstitute journals reported these tasks as challenging. We expect the community of student-run journals to continue to grow and benefit scientific editing and publishing. Challenges these journals face may be addressed through the support of senior researchers and organizations that promote collaborations between journals, allowing journals to pool resources and expertise.

Introduction

A rapidly growing advancement in scholarly communication is the student-run academic journal. *Student-run journals* are defined as journals managed predominantly by student editorial boards that review manuscript submissions. These journals are diverse and address law; medicine; science, technology, engineering, and mathematics (STEM); and the humanities. Student-run journals mostly publish student work and are distinct from professionally managed journals that exclusively publish student work, such as the *Psi Chi Journal*.¹ This paper is an exploratory study of student-run journals in STEM, focusing on their potential to increase interest in the publication and critical-appraisal process among students and young scientists.

Student-run journals first arose within postsecondary institutions largely to provide students with a low-risk opportunity to engage in scholarly writing and critical appraisal of evidence and to promote student work.^{2,3} Student-run journals generally have more lenient publication standards than professionally managed journals, offering greater opportunities for students to publish papers on smaller projects or research completed for a class while they juggle their studies and extracurricular activities.^{4,5} By engaging students in academic publishing and the peer-review process, these journals help to develop the writing and critical-thinking skills valued by researchers.^{3,5} In a self-assessment of the *Journal of Purdue Undergraduate Research*, 94% of student authors reported new knowledge about the process of publishing an article, and 72% reported learning about writing for a professional publication.² Participating on the editorial board also provided students with opportunities to develop leadership and critical-appraisal skills.⁴⁻⁷

Student-run academic journals did not arise without controversy. The academic credibility of these journals has been challenged by some scholars because the student editors were seen as inexperienced and unprepared for their

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roles.⁸ Proponents of the journals argued that most journals were supported by university faculty members who were involved in editing content and guiding student editors.⁹ Some also worried that frequent transitions in journal management might impede development and sustainability: every year, new student editors and leaders must be selected and trained to replace graduating students.¹⁰

Increasing enthusiasm for scholarly writing and publication through student-run journals has the potential to positively affect future editorial and publication quality. By introducing the peer-review process to students early in their training, these journals may encourage students to pursue careers in research and also develop future investigators who are more proficient in scholarly writing. The early interest in literature engagement may be particularly relevant to the currently waning field of physician-scientists.^{11,12} These journals also train journal editors earlier in their careers; many journal editors have described editing as a difficult career path to enter because of the lack of proper training or opportunities.^{11,12} Furthermore, these student-run journals promote improved communication with the scientific community by encouraging young scientists to articulate and share their work.

Methods

A mixed-methods, cross-sectional Google Forms survey was distributed to 122 North American student-run academic journals in STEM. Because there is no comprehensive database of student-run academic journals, we identified journals through a Google web search. Search terms used were *student-run academic journal*, *student research journal*, *undergraduate research journal*, and *high school research journal*. The most complete list of student-run journals was compiled by the Council on Undergraduate Research (http://www.cur.org/resources/students/undergraduate_journals/), and all journals on this list, in addition to journals identified through the Google web search, were initially screened for inclusion.

The survey consisted of 44 questions regarding journal structure, review methods, and journal management (Appendix A: <https://www.csescienceeditor.org/wp-content/uploads/2017/10/17-041-Appendix-1.pdf>). These quantitative and qualitative questions covered a broad range of topics to characterize student-run journal goals and operation. Follow-up emails requesting completion of the survey were sent after 1 week.

For the survey responses to be included in the dataset and to ensure the validity of the data, each respondent had to be either a student editor or a member of the journal's management. In cases where multiple respondents replied for one journal, the most senior respondent's answers were used. Journals were included only if they published work in STEM and were based in North America and journal

management or editorial services involved students. Because of intercontinental differences in academia and publishing, only North American journals were included to ensure a more homogeneous study population. Multidisciplinary journals were included as long as they published articles in at least one of the STEM fields. Journals were excluded if they were not published in English or were no longer active (Figure 1).

Results

Of the 122 journals contacted, 29 journals responded, for a 24% response rate. After exclusion of duplicates and journals that did not fulfill the inclusion criteria, 26 journal responses were analyzed.

Student-Run Journals on the Rise

Although student-run journals in STEM first began publishing as early as 1928, the number of such journals demonstrated a 9.9-fold increase from 1995 to 2015; the total number is projected to reach 222 by 2020 (Figure 2). Journals surveyed were established a median of 9 years ago (interquartile range = 10), and 95% were founded within the last 25 years (Figure 3). Most journals were not well established in the broader scientific-publishing community. Currently, none of the journals had an impact factor and only 42% were indexed in at least one online journal database

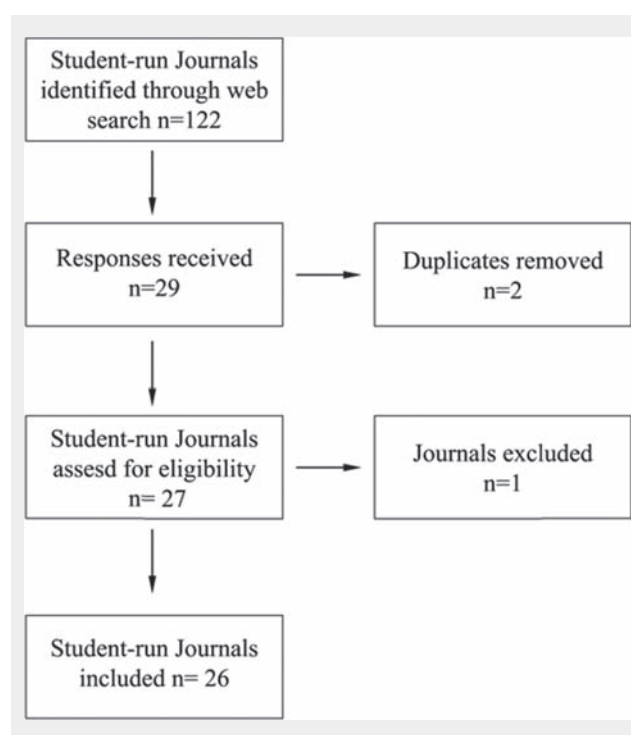


Figure 1. Identification of eligible student-run journals for analysis. Excluded journals were not student run.

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Table 1. Summary statistics of student-run journals.

Journal Information	Findings
Authorship Restriction	Of the 52% of journals that restricted authorship, all required authors to be students. Only one journal charged manuscript-submission or -publication fees.
Mission Statement	A total of 80% of journals' mission statements involved promoting student research or publication.
Institute	Only 3 of the 26 journals were interinstitute, and all of the institute-based journals were connected to a university or college.
Indexing	Only 42% of journals were published in at least one database. Of the journals that were indexed, 64% were in Google Scholar.
Publicity	Social media were used by 65% of journals to publicize their issues.

(Table 1, Appendix A: <https://www.csescienceeditor.org/wp-content/uploads/2017/10/17-041-Appendix-1.pdf>).

Engaging Students in Scholarly Writing and Critical Appraisal

Eighty percent of respondents stated their journal's mission included either promoting student research or encouraging students to engage with research and publication or both. In addition, just more than half of the journals surveyed restricted authorship to students at a certain stage of education (Table 1). For instance, many undergraduate

student-run journals only accepted submissions from fellow undergraduate students. Although all but one journal accepted original research, many also accepted other forms of submissions that did not require primary research; 64% of journals accepted review articles, and just under half accepted editorials, opinion articles, and interviews (Figure 4). Only one journal charged fees for submitting manuscripts or publishing work (Table 1).

Student-run journals also engage students by encouraging readership. All of the journals surveyed identified students as at least a portion of their target audience (Figure 5). Seventy-six

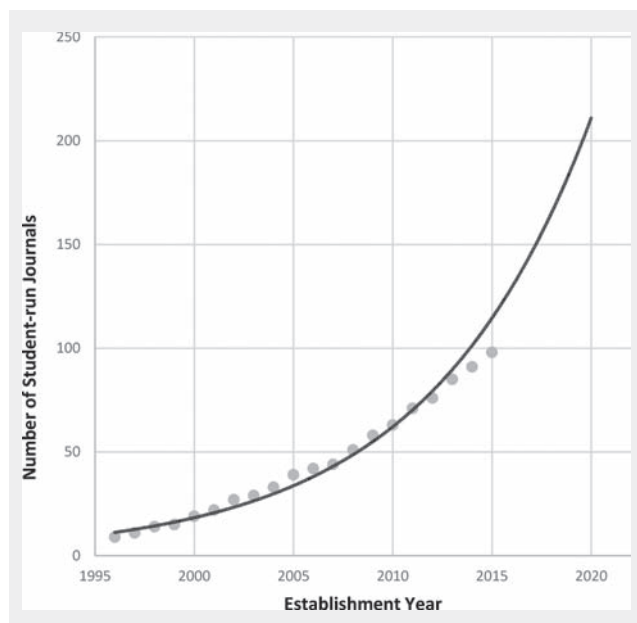


Figure 2. Exponential growth of student-run journals from 1995 to 2015. $R^2 = 0.98052$. $y = 1E-105e^{0.1222x}$. The trend line is extended to 2020 to show the projected growth of student-run journals. A total of 222 student-run journals are expected by 2020.

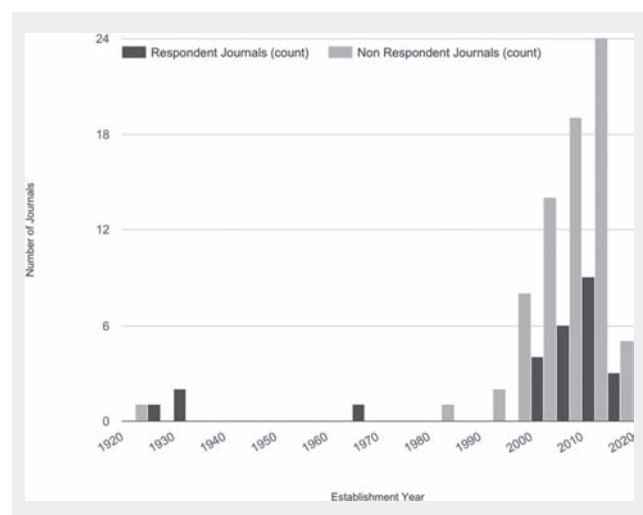


Figure 3. Recent increase in student-run journals. The mean years since the establishment of both non-respondent and respondent journals is 9 ($n = 100$). Outliers include *Yale Journal of Biology and Medicine* (established 1928), *University of Western Ontario Medical Journal* (established 1930), *University of Toronto Medical Journal* (established 1923), and *The Journal of Psychology and the Behavioral Sciences* (established 1966). If the establishment year could not be identified, the year of the first issue was used.

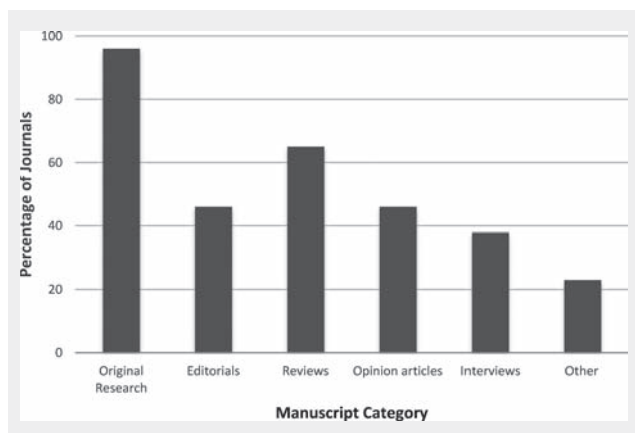


Figure 4. Distribution of accepted submission categories indicates most journals accept original research. The distribution of accepted submissions is shown as a percentage of all respondents ($n = 26$). *Other* includes extended abstracts, laboratory features, awards, cover contest submissions, news articles, and case reports.

percent of journals used either social media or marketing directed toward students, including in-class presentations, collaborations with on-campus clubs, and presentations at student conferences (Table 1, Appendix A: <https://www.csescienceeditor.org/wp-content/uploads/2017/10/17-041-Appendix-1.pdf>).

Challenges Faced by Student-Run Journals

Forty-six percent of journals had editorial boards with some to no background in the subject area of the manuscripts they were assigned (Figure 6), and 85% of journals were run by students completing their undergraduate degrees (Table 1, Appendix A: <https://www.csescienceeditor.org/wp-content/uploads/2017/10/17-041-Appendix-1.pdf>). To maintain the credibility of the peer-review system, all but one journal asked senior researcher reviewers, who included graduate students, postdoctoral fellows, and faculty members, to assess manuscripts after evaluation by student editors.

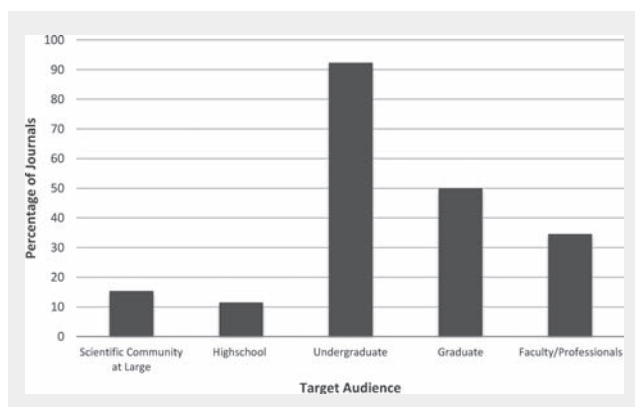


Figure 5. Target audience of student-run journals is mainly undergraduate students. The target audiences of journals are shown as a percentage of all respondents ($n = 26$).

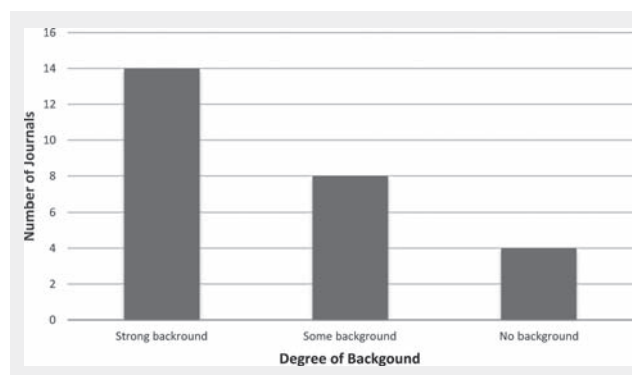


Figure 6. Level of previous editorial background knowledge in manuscripts assigned to student editors. The overall confidence of student editors for submitted manuscripts as assessed by survey responders.

Despite active promotion and marketing to student readers and writers, some student-run journals encountered challenges in outreach: 65% of respondents found gathering manuscripts submissions at least slightly challenging, and 42% found recruiting reviewers at least slightly challenging. Additionally, 38% of journals found management transitions at least slightly challenging (Figure 7). Fewer interinstitute journals than single-institute journals reported challenges in recruiting reviewers (33% versus 53%), gathering manuscripts (33% versus 65%), and transitioning managers (33% versus 47%; Figure 8).

Discussion

Growth of Student-Run Journals

Student-run journals present an exciting platform to further engage students in research, scholarly writing, and critical appraisal. Most student-run journals appear to have focused

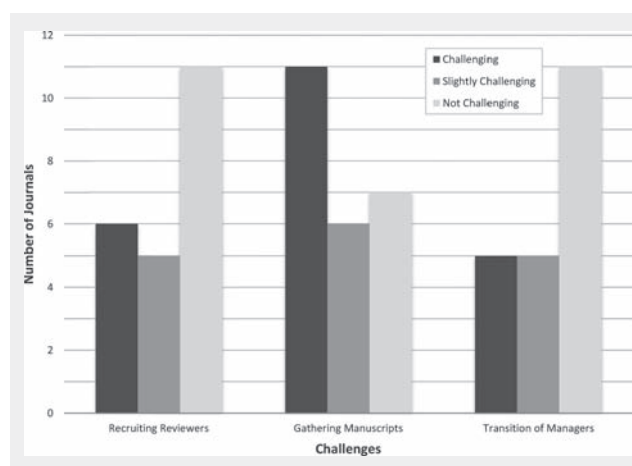


Figure 7. Challenges faced by student-run journals. Responses ($n = 24$) were categorized as *challenging*, *slightly challenging*, or *not challenging* for each item. Two journals did not respond to the question of gathering manuscripts, and three did not respond to the question on transitioning managers.

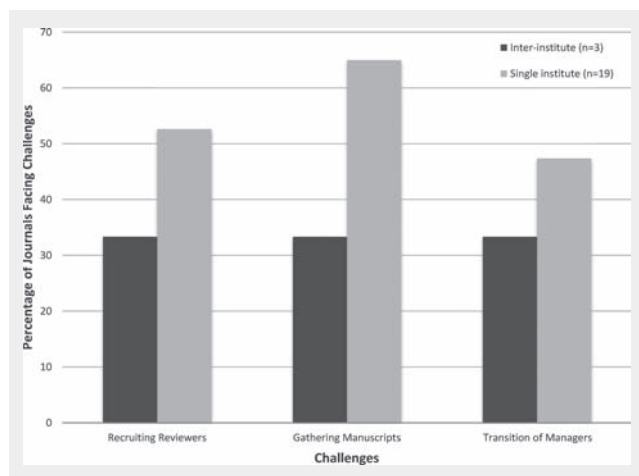


Figure 8. Differences in challenges between interinstitute and single-institute journals. Indicated differences between interinstitute ($n = 3$) and single-institute journals ($n = 19$) are shown.

on expanding within their institutions rather than the broader scientific community. Student-run journals were also largely using social media to promote their journals and invite new submissions. This strategy is logical, given that most institutional journals targeted only students at their respective institutions. We expect to see continued growth and development of student-run journals within their institutions as they gain recognition and readership. In addition, we expect the use of social media to promote both student-run journals and traditional journals to grow, considering the increasing engagement of young scientists and students who frequently use social media in publishing. Because of student-run journals' use of social media, Altmetric (which captures the attention a paper receives across a range of online platforms, including social media) is perhaps a better tool for measuring readership of these journals than the traditional impact factor. These journals can benefit the scientific community by promoting scholarly writing and critical-appraisal skills in students and encouraging students to pursue careers in research. These journals should help better equip the next generation of scientists to communicate their research and critically read the scientific literature.

Challenges Student-Run Journals Face

Despite the recent growth of these journals, a large number continue to face challenges in recruiting faculty reviewers and student editors with sufficient background knowledge. To tackle the gap in student-editor knowledge, some journal respondents stated that editorial board members usually performed independent research before reviewing manuscripts assigned to them. Although this was helpful to assist student-editors' comprehension of the manuscripts, it was no guarantee that student editors had the experience to sufficiently fulfill the role of an editor. A few journals have instituted mandatory training for new student editors, which

may be a better way of preparing them for the role. At almost all journals, initial manuscript screening and editing was conducted by student editors before the work was sent to a senior researcher for peer review.

It can also be difficult to find senior researchers to review manuscripts, considering that many of these journals are new and may not have established credibility at their institutions. Increasing involvement of senior researchers as advisors may ameliorate many of these challenges. Senior-researcher involvement can lend student-run journals more credibility, create greater connections with potential reviewers, provide a stable form of management, and promote journals to their students. Unfortunately, inducing senior researchers to commit their time to advise student-run journals can be challenging.

Interinstitute journals may face fewer challenges than single-institute journals because of a larger target population and improved access to faculty and resources at various institutions. However, only three interinstitute journals responded to our survey; therefore, their responses may not represent the entire population.

Study Limitations

Importantly, our identification of journals may have been influenced by selection bias, as we included only journals that were currently active. Journals established further in the past were less likely to be currently active, and therefore their exclusion may have skewed the data to show a greater growth in journals recently. We did not include inactive journals as they often lack electronic records of existence and are thus difficult to study comprehensively.

Personnel at student journals had varied opinions about the roles of editors and reviewers. A few journals saw the two as completely distinct, as is more common in traditional journals, whereas many saw the two terms as interchangeable. *Reviewer* and *editor* may have been used as synonyms because student editors were taking on certain responsibilities traditionally assigned to reviewers and sometimes acting as both when a reviewer could not be found. Thus the line between the two roles may actually be blurred for many student-run journals.

Future Directions in Scientific Publishing and Editing

To tackle the challenges student-run journals currently face, we suggest journals increase faculty involvement and begin to pool their resources and expertise with other journals. We expect an increasing number of interinstitute student-run journals, facilitated by the role of organizations such as the Council of Science Editors and Society for Scholarly Publishing in encouraging and facilitating interinstitute collaborations. Given the proper resources and support, innovation and leadership in scholarly publication through student-run journals have great potential for promoting better scientific communication.

Conflicts of Interest

The authors of this manuscript serve on the editorial board of the *STEM Fellowship Journal*. This publication is an open-access, student-run, peer-reviewed journal that publishes undergraduate and high school STEM scholarly research and was one of the survey respondents.

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Hiring and Training Copy Editors for Scholarly Publishing

Jessica LaPointe

Hiring a new copy editor is one of the most challenging and rewarding parts of my job. The decision to make a new hire is usually determined by the exit of an existing staff person, but may also be driven by the need to keep up with a constant influx of new submissions.

After securing official approval to add to my staff, the next step is to craft an ad to attract candidates with the right qualifications. This step can be surprisingly difficult. A good job ad must be more than just a list of required education and years of experience. It should give potential applicants a sense of the kind of working environment they can expect if they are hired, not only what is expected of them. It's a lot like dating: you wouldn't get very far if your dating profile simply listed all the things you want in a potential mate. You must also give a sense of the kind of person you are, what you enjoy, and how you express yourself. Potential matches should not be caught unawares, to meet up for a first date and feel you are not at all the person they expected. Likewise, if applicants have a sense of our company culture and working environment, they are better able not only to tailor their application materials to the specific position they are applying for, but also to understand what they are getting into.

Finding qualified copy editors is not easy. Few people outside our industry know what a scholarly society is or does, and even those already in publishing are unlikely to be aware that some of these societies have publications departments. Once I start to receive resumes and cover letters, the real work begins: evaluating candidates to determine who will move onto the next stage—phone interviews. After years of hiring copy editors, one thing I would recommend to applicants is to pay attention to the content of the job ad. Too many candidates apply from out of state, asking about remote or freelance work, when the ad clearly states we are hiring for an on-site, in-house position. Other candidates submit only a resume and no cover letter, leaving me wondering about their interest in the job or anything about them other than their previous positions

and where they went to college. A sincere, engaging cover letter is an effective tool for drawing the hiring manager's attention, and I highly recommend candidates include one when applying for jobs.

Once I've narrowed the field down to the most likely candidates—those who have the necessary qualifications and also who seem like a good fit for the job—I start setting up phone interviews. As an introvert, I find talking to people on the phone somewhat nerve-racking, but I've gotten better at it over time. I usually have a script of sorts to work from; it includes a spiel about the organization as well as a list of questions. The questions for each candidate are the same so I can review the answers and compare them against those of other applicants. The most difficult phone interviews are the ones in which I receive curt, one-word answers. As I'm asking questions of the candidate, I want more than a single sentence: the questions are designed to spark a conversation that flows, in which we can each learn more about one another and about the job: whether the candidate would be interested in and satisfied with the work, and whether they would be easy to train and work with. Candidates who give short responses and wait in silence for the next question are rarely called for a second interview. Some phone interviews develop organically as a conversation, and these are a delight—at these times I wish I had more than one available spot for a new copy editor.

After sifting through 180+ resumes and conducting 15+ phone interviews, I select 3 to 4 candidates to come for in-person interviews during which they will meet me (their potential future supervisor) as well as my direct supervisor (the American Meteorological Society [AMS] director of publications) and the rest of the copyediting team. Our interviews are simultaneously casual and comprehensive: the candidate takes a copyediting test and answers questions from me alone, meets with my supervisor (alone), and sits in a room with the 9 copy editors who will be their new coworkers, where they answer questions on any topic the copy editors choose, from their education and work experience to what *Lord of the Rings* character they see themselves as and why. The choice of questions is entirely up to the copy editors, and I am not present while they meet with the candidate. I want them to feel they can evaluate the potential new hire according to the criteria that matter to them, and I want the candidate to feel comfortable asking questions they might be hesitant to ask if their potential supervisor is in the room. After these interviews, the copy editors and I convene to

JESSICA LAPOINTE is the managing copy editor at the American Meteorological Society as well as the copy chief of *Science Editor*

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discuss the candidate and compare notes. We often agree, although candidates can seem quite different in the one-on-one interview with me than with the other copy editors, and I've often been surprised by the copy editors' assessments.

Once a candidate is hired, the training process begins. New copy editors are typically in training for about 6 months before they start copyediting manuscripts without supervision. Several weeks after that, they are trained to work on proofs, accepting or rejecting the authors' edits and proofreading carefully to catch any errors left over from the manuscript editing stage.

First thing each week, I check the queues: manuscripts that are ready to be copyedited, proofs that need proofreading. The queues vary from journal to journal. Some broader-interest journals get so many submissions they are always full to bursting; other, more narrowly focused or technical journals receive fewer submissions and thus tend to have smaller queues. Copy editors are assigned their own queues to monitor, and manuscripts are handled on a "first come, first served" basis (with the exception of articles that have been designated as "expedited," which can happen for a number of reasons).

When the work day starts, a copy editor may choose first to check email or to finish up a paper or proof left over from the previous day. We aim for an average of one paper and one proof each work day, although each day is rarely wrapped up so neatly. Often, a more challenging paper will take a couple of days, and a copy editor might choose to do a week's worth of proofs in one afternoon.

The first several weeks of a copy editor's training consist of learning how to properly format reference lists in AMS style. Then the training progresses to title page elements (article title, DOI, authors' names and affiliations, corresponding author contact information, etc.), figure and table callouts, and section headings. The process of copyediting a paper proceeds along the same path: first references are carefully checked for accuracy and completeness and set in AMS style, then title pages are copyedited, figure callouts are placed, and section headings are styled. Reference sections are given such care they can take up most of the time of copyediting a paper. Copy editors occasionally contact an author to resolve queries during the manuscript copyediting stage, but more commonly queries are sent to the author in the proofs, where authors can respond to them and make any additional corrections.

Once the preliminary steps are done (references, title page, etc.), it's time to get down to the "meat" of the paper: the main body text. Copyediting this might take a day or more, or it might take only a few hours. Somewhat surprisingly, the length of time it takes to copyedit a paper rarely correlates directly to its length. Copyediting slows down significantly when the paper contains references that have not been cited in the text or citations that have no corresponding references. This may happen when the paper has undergone multiple rounds of revisions, and sections have been significantly reworked, rewritten, added, or omitted entirely.

Copy editors rely on a number of sources for style: the *Chicago Manual of Style* and *Merriam-Webster's Unabridged Dictionary* are essential, and along with these we have an 82-page in-house style guide that includes detailed instructions on how to handle every aspect of a manuscript, from citations and references to table and figure captions, number/unit pairs, author affiliations, and footnotes, as well as how to set dozens of words and phrases that are specific to the atmospheric and oceanic sciences.

Copy editors meet monthly to discuss style points and workflow matters, and they have joint meetings with the technical editors (subject-area experts) quarterly. Most copy editors are also involved in other aspects of AMS operations, including marketing and web development, which require additional meetings. Not a week goes by without at least a couple of meetings copy editors need to attend, which cuts into the time that can be spent copyediting. A delicate balance must be maintained between the many competing needs of the organization and the various hats we all wear, and the necessity of copyediting as many papers as possible: take too much time and authors start to complain; move too quickly and quality can suffer.

Since I've been the managing copy editor at AMS, I've hired 6 of the total of 10 full-time copy editors. As time has gone by, these newer staff members have flourished, establishing monthly board game nights and writing workshops, and expanding into roles in web development and other realms of technical support for the department. They've also become friends. These tight-knit relationships contribute to the overall happiness and thus productivity of my copyediting team, resulting in its functioning as a well-oiled machine. That's why I take such great care when selecting and training a new copy editor: it's a complex challenge, but the rewards make it all worthwhile.

The Future is Here: Scientific Publishing Predictions Come True

Lindy Gervin

It is interesting to study the history and see the changing landscape of journal publishing. Over the past 10 years, so much has changed and yet nothing has changed. In looking at past topics discussed by members of CSE, I discovered that the same topics are still being discussed today: peer review, authorship disputes, emerging technologies, and ultimately, expanding each journal's reach to engage a wide audience of readers.

What has changed: software, programming, and applications. In the early 1990s, journals began to use software to streamline processes. Journals began managing information through databases. Journals gained the ability to track changes in documents through word-processing applications. Efficiency increased with web-based applications that allowed editors to

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access information electronically, from any location. Today, the options for tracking data and metrics, proofreading via software systems, and enhancing communications are abundant.

The future of scientific publishing in the electronic age¹ was a topic discussed at the CSE Annual Meeting in 2002. Speaker Maria Lebron made several predictions that came true. She asserted that "e-books would become a reality." She couldn't have been more correct. She was also correct in her closing statement that the "Internet is easier to build than to predict." Although more analytics on user behavior are available than ever before, the Internet will always morph and change with the emergence of new programs and trends.

One shift since this discussion in 2002 is the idea of needing a behavioral-functional model as presented by Michael Mabe. He described this model as a predictive tool. With all the current online methods and studies, this model may now be outdated. Nonetheless, Mabe's prediction about the future of electronic publishing was entirely accurate.

Link

1. <http://cseditors.wpengin.com/wp-content/uploads/v25n5p155.pdf>

Life of a Paper: Beyond the Manuscript

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Jasmine Wallace

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Cary, North Carolina

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Shaun Halloran

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Durham, North Carolina

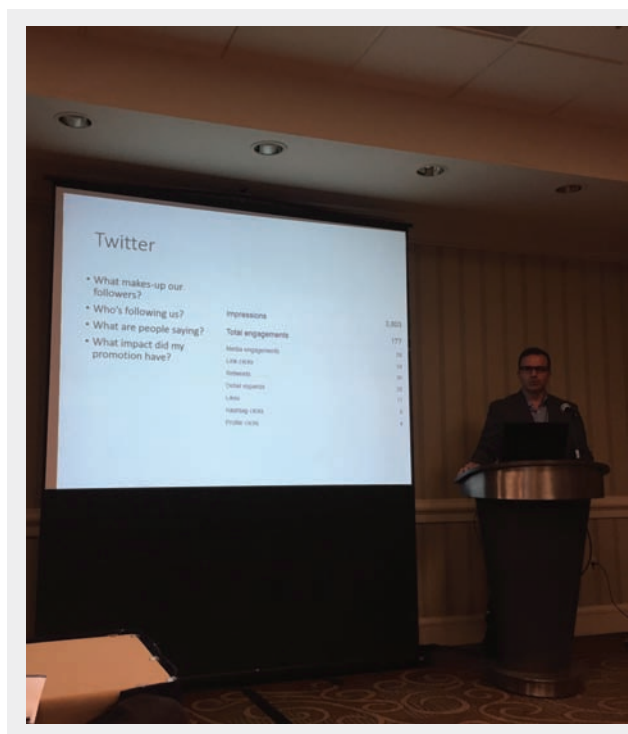
Glenn Landis

Editorial Director, Blood Journals
American Society of Hematology
Washington, DC

"The publishing world is changing so quickly that it's easy to overlook the essential, foundational elements. It's important to have a basic understanding of the entire process if you want to make good decisions about marketing your content." – Shaun Halloran

A large amount of information is generated throughout the life of a paper, from submission through publication. However, being published is not the end of the journey in the current publishing world. A range of factors, such as metadata and social-media information, play key roles in the ability to search for and discover a paper. Rajashree Ranganathan organized this session to provide an overview of these factors and to demonstrate the collection, processing, and application of relevant information.

Shaun Halloran, Operations Manager at *Environmental Health Perspectives*, explained how to use production tools to gather, track, and publish content and metadata. Clearly, there is a lot of information collected during the editorial process, but there is more to data collection. Halloran stated, "I focused my session on production and tried to educate the attendees on best practices for getting good metadata into their publications and handing that off to the platform and marketing teams to track impact and interest." Data organization that happens during production provides an opportunity to capture data that is only applicable to accepted papers. One major tool Halloran highlighted, eXtensible Markup Language (XML), generates and tracks metadata inherently. XML is customizable and easily translated to other formats, and there are many types from which to choose.



He briefly mentioned cloud-based author proofing, which maintains the entire proofing system in an electronic and trackable format, before discussing continuous publication. Though good metadata can be maintained without continuous publication, there are many benefits to this publication model, such as keeping the focus on the article instead of the issue, and tracking citations before the issue is assigned while still including overall issue information.

Glenn Landis, Editorial Director at the American Society of Hematology, described how to measure success with statistics. There are many ways to measure impact from citations, online usage, blog posts, and media coverage, to discussion boards, Facebook, Wikipedia, and LinkedIn. Landis uses Web of Science, Journal Citation Report, Altmetric Explorer, Twitter, HighWire Vizors, surveys, and sales to measure impact. Web of Science and HighWire Vizors are great tools, showing which subjects are most popular based on search filters, which articles have been cited the most, and more. Altmetric Explorer also captures impact metrics but from a marketing standpoint; for example, media coverage on Facebook of other articles in the same discipline and from past months. Twitter has

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similar statistics, including how many times a tweet has been liked and retweeted and how many times a link has been opened.

Surveys and sales statistics can also be useful instruments to gauge success. Landis shared some tips to consider before you begin collecting: specify, know your audience, decide on frequency, set goals, and save all your progress as you go.

Jasmine Wallace, Peer Review Specialist at the American Society for Microbiology, discussed information to be collected during the editorial process. She outlined and organized how best to collect information and how to make the process as streamlined and easy as possible. It is common to collect basic information at submission such as title, authors, institutions, email addresses, and keywords. There is also additional material that can be collected and used to measure long-term success of the manuscript, such as ORCIDs, social-media information, funder information,

and preprint information. Once you decide on which information to collect, it is important to determine what point in the process you plan to collect it.

For the collection of information to be user friendly, the implementation and user interfaces must be clear and up to date. Updating letter templates, how-to documents, help and frequently asked question (FAQ) pages, instructions to authors, and policies is essential to ensure that users provide the information you are requesting. Wallace explained the need to reevaluate existing features along with the latest updates to make sure your platform is easily navigable. She ended by suggesting monitoring your progress and effectiveness through ORCID, social media, funder information, and preprints.

When deciding whether and how to collect, use, or measure success through submission information, Halloran, Landis, and Wallace provided some excellent tools and tips to successfully navigate the process.

How to Maintain and Update Outdated House Style

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Senior Copyediting Coordinator
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Resa Roth

Freelance Editor
University of Washington Yeast
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This session offered a comprehensive, step-by-step approach to updating an outdated house style guide. Peter J. Olson first underscored a house style guide will *always* need to be updated: it must evolve alongside changing style manuals and expectations. There are three main manuals of style for writers in the sciences: *The Chicago Manual of Style*, *Scientific Style and Format*, and the *AMA Manual of Style*. He discussed the practical reasons for having a house style guide: to cover items not already included in the “big three” style manuals; to tailor the guide to meet the needs of a particular journal; to provide guidance when editing different types of articles, each with their own style rules; to have a standard format to use for author queries; and to be different from a style manual, out of preference or necessity. Olson then presented specific examples of the above-mentioned reasons to maintain a house style guide.

An effective style guide includes three important components: categorization, cross-references, and examples. Categorization is the process of filing the item under the most logical heading for the user. Use of cross-references throughout the style guide will help with navigation, reduce discrepancies, and allow for flexibility in organization. A style guide is easier to update when there is a single location for the style description itself (as opposed to listing it multiple times throughout the guide). Finally, the use of examples in a style guide promotes the proper application of house style rules. Examples should be clear, concise, comprehensive, and realistic.

Olson also described the importance of the centralization of a style guide. He explained a single person should have ownership of a guide’s maintenance and updates. In addition,

he recommended making frequent updates to a guide to simplify maintenance and minimize confusion—it is easier for users to assimilate the changes when there are fewer changes to absorb. Olson also described the benefits of online hosting: an online style guide enables users to find information quickly (related documents can be hyperlinked), provides improved version control (it reduces risk of discrepancy), and allows for more flexibility in the organization of the guide. In closing, Olson summarized the benefits of a house style guide: to communicate style customizations, promote uniformity in a publication, reduce confusion and editing time, and simplify the implementation of style changes.

Carrie Wright covered the second half of the house style update presentation, citing a recent style guide update in her own workplace as a helpful reference. She listed some of the logistical constraints (e.g., time, staffing, and budget) and tradeoffs associated with the update process. Wright recommended determining goals for style guide use, including versioning and ease of updates, as well as whether to outsource style guide updates or to do it in house. She recommended editors audit their house style guide against an external style manual (such as the *AMA Manual of Style*) and remove unnecessary deviations. Editors should also anticipate the upkeep process, together with ways to improve it: identify areas that may require more frequent updates, consider removing workflow instructions from the style guide, and reduce the opportunity for error introduction. Wright also reinforced the importance of using cross-references and removing areas of redundancy in the style guide. She recommended Google Docs for managing and storing a house style guide: the table of contents will automatically update to match the document headings, changes are saved and tracked online (along with the complete revision history), and it is easy to establish and invite users and set their permissions.

Wright noted the style guide update process can be difficult to complete because it is usually subordinate to the staff’s regular workload, but there are several ways to make sure the project continues to move forward: having an “accountability buddy” who checks in periodically to see what progress has been made, including the style guide update in formal performance review goals, and scheduling uninterrupted time to perform the update.



CSE: 60 Years of Achievements

1955
National Science Foundation funds American Institute of Biological Sciences to organize editors and plan an in-person conference.

1957
The first Conference of Biological Editors, with 46 editors and 13 observers in attendance, forms a joint committee with the American Institute of Biological Sciences on form and style to prepare a standard handbook. The conference also forms a membership committee and a committee on editorial policy.

1958
Volume 1, issue 1, of the *Conference of Biological Editors Newsletter*, which will eventually become *CBE Newsletter*, is published.



1960
The first *Style Manual for Biological Journals* (92 pages) is published.

1962
The Council of Biology Editors (CBE) mentors Latin editors who will soon form the Latin American Association of Editors of Biological Periodicals.



Domenico Faccoli, MA in 2000
June CSE January 1962

1969
The *CBE Manual*, 2nd edition, is translated into Japanese.

1972
The *CBE Style Manual*, 3rd edition (297 pages), is published.



1974
CSE publishes proceedings of *Economics of Scientific Publications*.

1974
CBE Newsletter becomes *CBE Views*.



CBE Views,
Volume 1, Number 1

1976
CBE Style Manual, 4th edition, observes international standards, and is again translated into Japanese.

1980s
Seminars, workshops, and the first short course for new journal editors are added to the annual meeting.



CBE Views,
Volume 5, Number 1

1989
CBE officially opens membership to anyone interested in the purposes of the council. The *CBE Style Manual*, 5th edition, is rewritten and expanded to cover ethics, copyright, and secondary services. CBE, EASE, and AESE conduct the 1st International Meeting of Science Editors in Philadelphia, PA.

1984
Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers, 6th edition, is published.



1985
A CBE Airlie House retreat, "Survival Skills for Editors," takes place in Warrenton, VA.

1986
CBE has a website.

1987
A restructured Short Course for Journal Editors is presented at the CBE Airlie House retreat.

1987
Two guides on poster sessions and editing graphs kick off a CBE series, *GuideLines*.



1988
CBE's new Short Course for Managing Editors debuts in Salt Lake City, UT.

1988
The CBE retreat "Authorship in Biomedical Publishing" is held at the Berkeley Marina Marriott.

2001
CSE's *White Paper on Promoting Integrity in Scientific Journal Publications* is written.



2003
CSE organizes its Global Theme Issue on Poverty and Human Development: 237 science journals from 37 countries simultaneously publish 750 articles to stimulate research in poverty and human development.

2006
CSE's *White Paper* receives its first update, and CSE debuts its new Short Course on Journal Metrics.

2010
CSE offers its first webinar: "Copyright 101"



2011
CSE launches its Short Course on Publication Ethics at the annual meeting in Baltimore.



2012
CSE's *White Paper* receives its second update.



2014
Scientific Style and Format, 8th edition, goes online.

1964
CBE counsels European editors who will soon form the European Association of Science Editors (EASE).

1965
The group incorporates as the CBE; annual dues are \$10.00. Restrictive bylaws limit membership to editorial management in biological sciences.

1966
CBE invites earth-science editors to its annual meeting. The following year, the invited group will form the Association of Earth Science Editors (AESE).

1967
CBE's first educational workshop, "Graduate Training in Scientific Writing," takes place at Rockefeller University.

1968
CBE's 2nd workshop, "Teaching of Scientific Writing to Graduate Students," is conducted in Carmel, CA.



1968
CBE publishes *Scientific Writing for Graduate Students*. As CSE grows, its books will be the basis of short courses and workshops presented by science editors in the US and internationally.

1969
The first CBE Meritorious Award (now the CSE Award for Meritorious Achievement) is presented to Fred Cagle, who drove the formation of the council.



CBE Newsletter, September 1969

1987
CBE publishes *A Guide to Journal Management*.



CBE Views, Volume 10, Number 1

1988
CBE publishes *Illustrating Science: Standards for Publication*.



1989
CBE publishes *Financial Management of Scientific Journals*.

1989
The CBE-EASE-AESE 2nd International Meeting of Science Editors is held in Ottawa.



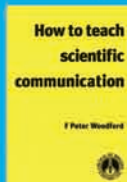
1990
CBE publishes *Ethics and Policy of Scientific Publication*.

1991
CBE publishes *Peer Review in Scientific Publishing*.

1991
CBE membership reaches 1,100.



1999
CBE publishes *How to Teach Scientific Communication* (formerly *Scientific Writing for Graduate Students*).



2000
It's official! CBE becomes CSE (Council of Science Editors), welcoming all science editors.



2000
Volume 23, issue 1: *CBE Views* becomes *Science Editor*.



2002
The CSE Short Course on Electronic Publishing Solutions is presented in place of the Short Course for Web Editors prior to the 2002 annual meeting in San Diego.



2005
The CSE Short Course on Statistics for Editors debuts at the annual meeting in Tampa, FL.

2005
CSE begins its alliance with the African Journal Partnership Program as they expand and build visibility.

2006
Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers, 7th edition, is published.



2013
The CSE Certificate Program celebrates its first two graduates.

2015
CSE partners with Associação Brasileira de Editores Científicos to mentor education programs for Brazilian editors.

2016
CSE relaunches *Science Editor* and agrees to a Russian translation of CSE's *White Paper*.



2017
CSE looks forward while celebrating 60 years of achievements at the annual meeting in San Diego.



Council of
Science Editors

CELEBRATING 60 YEARS

JATS & BITS: Facilitating the Flow and Preservation of Science

MODERATOR:

Tony Alves

Director of Product Management
Aries Systems Corporation
North Andover, Massachusetts

Chandi Perera

CEO
Typefi
Melbourne, Australia

SPEAKERS:

Jeffrey Beck

Technical Information Specialist
National Center for Biotechnology
Information
Bethesda, Maryland

Bruce Rosenblum

CEO
Inera Incorporated
Belmont, Massachusetts

REPORTER:

Tony Alves

Journal Article Tag Suite (JATS) is an eXtensible Markup Language (XML) format used to tag scientific literature published online. It is a technical standard developed by the National Information Standards Organization (NISO) and was originally developed by the U.S. National Library of Medicine for archiving and interchange of scientific information. The Book Interchange Tag Suite (BITS) is the “book” version of this XML format, and though it is not yet an approved standard, there is increasing interest in adopting BITS for book-related workflows. Both JATS and BITS XML are important standards used for passing metadata and full-text journal and book content throughout the scholarly publishing ecosystem. This session started with an overview of JATS and BITS, including the history, the XML structure, and other basic facts about these XML formats.

Jeffrey Beck, a Technical Information Specialist from the National Center for Biotechnology Information, part of the National Library of Medicine, began a detailed overview of JATS and BITS by defining terms such as *XML* and *Document Type Definition* (DTD). Beck then walked the audience through an example of JATS, pointing out and describing the various sections of the marked-up document. Beck diagramed a typical document, relating parts of the article back to the XML version (Figure 1). Finally, Beck reviewed BITS in a similar way, comparing and contrasting the differences between a book model and a journal article model.

Chandi Perera, CEO of Typefi, a provider of automated publishing software, asked the question, “Why use JATS and BITS?” He started by discussing the fact that all the largest publishers had invested in their own proprietary XML standards 15 years ago, whereas smaller publishers could not afford this luxury. This created a problem for vendors who provided publishing and distribution services. Perera focused on how JATS and BITS can increase publication

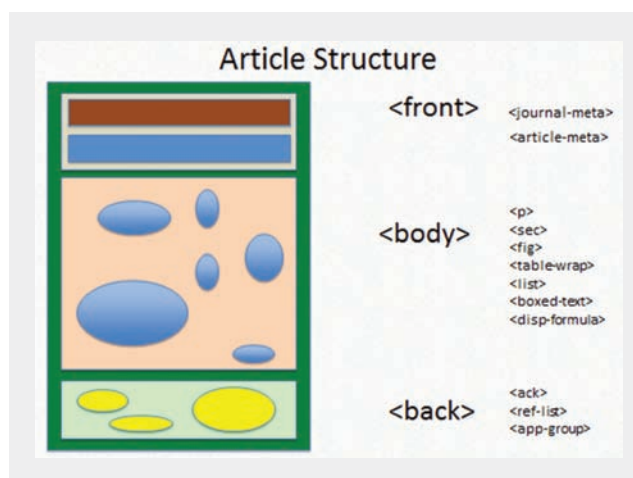


Figure 1. Diagram of a research article and related XML markup.

efficiencies and reduce costs, especially for smaller organizations that do not have the resources to create tools and systems in house but instead rely on partners to build and operate publishing systems and services (Figure 2). Perera discussed three organizations that experienced workflow improvement, higher production volumes, and decreased production time using JATS and BITS during the production process.

Bruce Rosenblum, CEO of Inera Incorporated, a provider of automated editorial and XML solutions for Microsoft Word, reviewed the considerations and preparation required to bring XML workflows into an

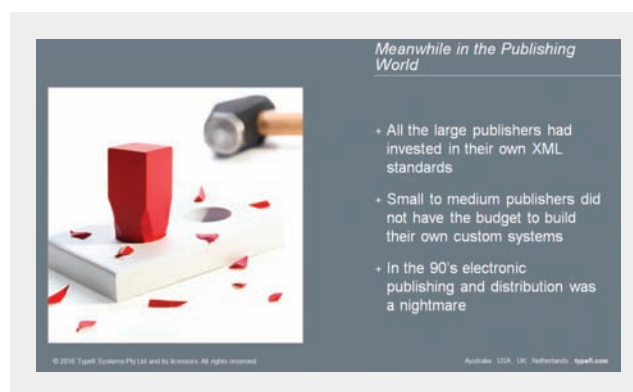


Figure 2. JATS and BITS increases efficiencies and reduces costs, especially for smaller organizations that do not have the resources to create tools and systems in house.

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Figure 3. Importance of XML quality and why good XML can significantly improve workflows and the final published product.

organization's processes. Rosenblum laid out a realistic vision for XML's place in various parts of the process, from online XML authoring to post-publication XML conversion issues. He reviewed the "author reality," which includes many obstacles to imposing a structured process, such as entrenched habits, fear of technology, and the variety of tools used by researchers in preparing scientific reports. Rosenblum compared four XML workflows, outlining their advantages and disadvantages. He wrapped up his talk with a detailed look at the importance of XML quality and how good XML can significantly improve workflows and the final published product (Figure 3).

Links

1. <https://jats.nlm.nih.gov>
2. <https://jats.nlm.nih.gov/extensions/bits>
3. <https://www.typefi.com>
4. <https://www.inera.com>

Short Course for Manuscript Editors

FACULTY:

Elizabeth Blake

Director of Business Development
Inera Inc.
Belmont, Massachusetts

Stacy Christiansen

Managing Editor
JAMA
Chicago, Illinois

Annette Flanagan

Executive Managing Editor
JAMA and The JAMA Network
Chicago, Illinois

Peter J. Olson

Senior Copyediting Coordinator
Sheridan Journal Services
Waterbury, Vermont

REPORTER:

Resa Roth

Freelance Editor
University of Washington Yeast
Resource Center
Seattle, Washington

Editors with diverse backgrounds opted to take the Short Course for Manuscript Editors. Attendees' jobs included editorial assistant, managing editor, and manuscript editor, among others; employers included the United States Department of Agriculture (USDA) Forest Service, the Centers for Disease Control and Prevention (CDC), various journals, universities, and many more. Attendees came from all regions of the United States and Africa to participate in this course.

The presenters' cumulative years in the scholarly publishing industry enabled them to speak to many scenarios and offer targeted advice. The course comprised both broad and specific concepts—from ethical dilemmas to use of shortcuts in Microsoft Word. Moreover, it was the perfect opportunity to interface with peers on a smaller scale and learn about how certain organizations handle specific publishing topics.

Word Tips

The course started off by highlighting some manuscript editing best practices, for both copyediting and technical processes. Elizabeth Blake explained how Word shortcuts and customizations can help editors achieve higher-quality outcomes. This course focused on the Word 2010 application; however, other versions and the Mac versions were also covered. Throughout her presentation, Blake emphasized how helpful it is to customize Word applications: not only the Quick Access Toolbar and Word Ribbon, but also a majority of the functions of Word can be customized (File → Options is a great place to start).

Some document formatting tips:

1. Repair a corrupt Word file using Open and Repair.
2. Change the view to always see fielded text (Options → Advanced → Show Document Content), such as references and citations.

3. Convert text to a table (Insert → Table) and also table to text (Table Tools → Layout).
4. Highlight arbitrary blocks of text, including columns, using the Alt + click combination.
5. View the heading structures within a complex document using Word paragraph styles and the Navigation Pane.
6. Remove formatting from preselected text using the Ctrl + space combination.
7. Apply formatting copied from preselected text using the Format Painter.
8. Return to the last edit in a document, even after closing it and shutting down the computer, using Shift + F5 (also to cycle through the three previous edits in an open document).

Consistent Data

Using the Split tool (View ☐ Split), data in the abstract and tables can be checked against the data in the results, and image content can be checked alongside figure legends. The Split tool can also be used when checking references to make sure the authors and years match the in-text citations, and to see if the title of the reference is related to the sentence subject.

Consistent Usage

The Find and Replace feature and the Navigation Pane can be used to make local or global text changes to enforce consistency within a document.

Terminology

Jargon and colloquialisms should be avoided; for example, using "significant" when the term "substantial" is more accurate, and describing patients as "diabetic patients" instead of the correct terminology, "patients with diabetes." These options can be customized in the Writing Style Settings.

House Style Compliance

The Find and Replace (Ctrl + H) feature can help check house style compliance and to review manuscript completeness. Within this feature, the More button offers options to search for special text styles such as superscript or italics by using the Special and Format drop-down menus. Furthermore, Special → Clipboard Contents can be used to replace the Find What text with clipboard contents; this option is useful when replacing text that includes special characters or complex formatting. It is also worth exploring the Wildcard

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option (e.g., change hyphens to en dashes in all numeric ranges).

Grammar and Syntax

The newer versions of Word have improved grammar checking features; however, because language can be nuanced, it has not replaced the value of a grammar check by a human editor. Using File → Options → Proofing it is possible to customize the dictionary used by Word and add commonly used terms that are not already in this dictionary, including field-specific terminology, either by adding them one by one or as an entire list from a style guide. It is also possible to incorporate specialized dictionaries (e.g., Dorland's) for more accurate spell checking. Word now has a "contextual spelling" feature that catches words that are spelled correctly but are incorrect according to the surrounding context.

Author Queries

The Word Comments function makes it possible to insert saved boilerplate text for common author queries using AutoCorrect or AutoText. Still, descriptive author queries are necessary to elicit clear answers.

File → Options

The use of Word Options (File → Options) came up throughout Blake's presentation. In Word Options, it is possible to turn off automatic superscripting of ordinal numbers (such as 1st), text drag-and-drop, and even the Paste Options button that often obscures text. Finally, Blake reminded course participants always to save any customizations when updating to a newer version of Word because they will not carry over automatically.

Ethical and Legal Issues in Manuscript Editing

In the next segment of the course, Annette Flanagin discussed several ethical and legal issues relevant to scientific editing. A contentious issue in publishing is authorship and how to differentiate an author from a contributor. Equally important, journal editors and authors must discern whether authors should be listed in the byline or as collaborators and when it is appropriate for individual authors to be listed as a group author. Flanagin also discussed cases of conflicts of interest, copyright and publication licensing, permissions, and journal policies.

According to data published by the US National Library of Medicine, the average number of authors per MEDLINE or PubMed citation has been steadily increasing since 1970 (see <https://www.nlm.nih.gov/bsd/authors1.html>). Along with the increase in number of authors listed on a paper, there have also been increasing authorship disputes in recent years. Editors

must understand policies and criteria for authorship, so they can identify any authorship issues prior to publication. The Committee on Publication Ethics (COPE; publicationethics.org) is a helpful resource for editors; it provides guidelines on how to handle various ethical issues that may surface during the publication process. Another resource, the International Committee of Medical Journal Editors (ICMJE), lists criteria for authorship: an individual must meet the four criteria to be considered an author. Authors must also be able to take public responsibility for appropriate portions of the work. To ameliorate authorship issues, some journals ask authors to self-identify their contributions, while others ask authors to fill out a checklist of contributions (covering all aspects of the research, manuscript, and funding). Authors need to understand the ICMJE authorship criteria and adhere to them, and journals need to apply consistent policies on authorship (unfortunately, many journals do not). Issues regarding the order of authors must be tackled by the authors themselves, who also must appoint a "corresponding author" to serve on behalf of all coauthors. The corresponding author is the primary correspondent with the editorial office during manuscript submission and review.

If a paper has a large number of authors, it may be more appropriate to list many of the individuals as collaborators instead of authors; the names of collaborators are still displayed in PubMed. In cases where there are hundreds of authors, it is ideal to create a group author name for the byline. Moreover, individuals who have made substantial contributions (but who do not qualify as authors) should be listed in the acknowledgment section. However, editors must obtain permission from all people named in the acknowledgment section before listing them.

Conflicts of interest occur "when an author, reviewer, or editor allows a self-interest to influence judgment," and these should also be disclosed in acknowledgment sections. The interest may not necessarily result in biased judgment and it may stem from a variety of areas: financial, professional, academic, ethical, political, or personal. It is better to declare a potential conflict outright than have the information uncovered after publication. Studies have shown industry sponsorship and financial relationships are associated with conflicts of interest and biased conclusions; although, despite the prevalence, authors are often in denial or confusion about which financial disclosures are relevant. Most journals require the author to disclose all financial interests surrounding the manuscript subject matter (for the past three years or the time period involving the work). Flanagin demonstrated how to fill out an ICMJE conflict of interest disclosure form, which automatically compiles a disclosure statement for authors. She also cited Openpayments.com as a means to view physicians' funding reports—it shows everything from paid meals to research grants.

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Flanagin also discussed copyright and publication licensing, including these aspects of copyright law: what it is, who owns it, how long it is in effect, and the Berne Convention. Flanagin advised caution when dealing with works that are presumed to be in the public domain because there are occasional exceptions. She referred to the *AMA Manual of Style* and CSE's *Scientific Style and Format* for more information on copyright basics. Copyright transfer is used by some journals when publishing manuscripts; it enables journals to lawfully publish the work and own all copyrights to it. Some journals use a publication license, which is an exclusive license granted to the journal for the publication of a work, where the ownership of the work remains with the author. Some works may not be protected by copyright (typically titles or shorter phrases) but may instead be covered by a patent or trademark. For federal government employees, their work is automatically in the public domain and is not protected by copyright law. The Creative Commons (CC; creativecommons.org), which aims to promote shared knowledge, gives authors access to free copyright licenses and allows them to decide on the conditions of the copyright.

Flanagin described the principle of fair use as one "that permits limited use of copyrighted material without acquiring permission from the rights holders." There are four factors that determine whether a situation establishes fair use: 1) the purpose of use, 2) the nature of the copyrighted work, 3) the portion of the work used, and 4) the effect of use on the market value of the copyrighted work. For works governed by traditional copyright (e.g., not CC licenses), there are not actually specific numbers or guidelines on the amount of text that may be used; however, the length should never diminish the potential value of the original work. Republishing an entire table may be a copyright infringement; sometimes using a few lines from a table is acceptable, provided proper credit is given. Editors and authors alike must be careful to avoid plagiarism. (There are several online plagiarism checkers: Turnitin.com, Crossref Similarity Check, and Quetext.com.) It is essential always to follow journal policies, get appropriate permissions, and use proper citations.

On the topic of permissions, Flanagin differentiated the two types: 1) permission for reproduction or adaptation of material and 2) permission to publish identifiable information about a patient (e.g., written descriptions, photos, or genetic pedigrees). On the issue of patient privacy, it is necessary to get written informed consent from the identifiable patient prior to publishing the information. Also, it is best to omit identifying details from the text unless they are essential to the research implications. Furthermore, patient information should never be altered or falsified.

An ethical-legal breakout session was held following the presentation to discuss common ethical dilemmas. In small

groups, participants discussed an example of an authorship issue and a conflict of interest. They then presented their conclusions in front of all the course attendees. Some groups opted to handle situations differently, but primarily there was agreement about how to proceed in these scenarios.

Editing Abstracts

For the third section of the short course, Stacy Christiansen discussed abstracts, including how to edit and perform quality control checks on them. An abstract acts as summary for an entire paper and describes the *who*, *what*, *where*, *when*, *why*, and *how* of a study. Secondary to an article's title, the abstract is one of the first features readers will see, and it helps them decide whether to read the rest of the article. Most scientific abstracts are freely and publicly available, and they are searchable on websites such as PubMed or Google Scholar. The National Information Standards Organization (NISO) specifies every journal article should include an abstract.

Christiansen also discussed structured abstracts, which first appeared in the mid-1980s. Today, a majority of medical and scientific journals require some form of structured abstract (with 3–10 headings). There are some journals that publish unstructured abstracts, in the form of a narrative paragraph; the content often depends on the audience of the article and scope of the study. It also is not unheard of to find a table in the abstract, which JAMA terms "tabstract"; these can be helpful in cases of data-dense paragraphs, but they do not display properly in HTML or PubMed. Christiansen also offered examples of graphic and video abstracts—two relatively new abstract formats—and discussed the idea that these may be more user-friendly to the general public; nonetheless, Christiansen also counseled these formats need to be used in conjunction with a traditional written abstract. Most importantly, abstracts serve as a synopsis for all aspects of the study, including the outcome.

Christiansen provided the mnemonic CCAT (clarity, consistency, accuracy, and thoroughness) to remember while editing abstracts. On the issue of clarity, she cautioned attendees to be aware of the possible overuse of punctuation (JAMA does not require complete sentences in its abstract prototype). For consistency, groups and comparisons must always appear in the same order and with the same name. Furthermore, abbreviations and nomenclature should be used consistently throughout. Regarding accuracy, it is important to look for data beyond *p* values or relative differences; the abstract must also include absolute numbers and percentages. It is vital to check results that appear in the abstract against the results in the rest of the paper. Additionally, all data presented in the abstract must also appear in the text or tables, though it is acceptable to round values in the abstract, as long as accuracy is not hindered

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(sometimes space constraints necessitate this practice). To ensure thoroughness, all information in the abstract must also be found in the rest of the paper; to this end, the important components (*who*, *what*, *where*, *when*, *why*, and *how*) of the paper should appear in the abstract. Finally, references, tables, and figures should not be cited in the abstract.

Best Practices

For the final lecture, Peter J. Olson discussed some best practices for editing in the STM fields. The main topics he reviewed were abbreviations, ambiguity, consistency, redundancy, word usage, and verb tense—all of which are essential to comprehensive copyediting.

Editors must take care with abbreviations and ensure they are used practically. If it is only used once in the document, then perhaps the abbreviation is not needed. Also, it is typically a good idea to use the abbreviation at each instance of the term after it has first been introduced. It's best to avoid using the same abbreviation for different terms in the same document (e.g., CSF for colony-stimulating factor and cerebrospinal fluid). Some abbreviations may require the use of lowercase letters (e.g., mRNA, CoA, and kDa), and gene names are particularly difficult to abbreviate (the rules vary with the species). For plural abbreviations, a lowercase "s" should be added to the end, with the exception of units of measure and inherently plural terms (e.g., National Institutes of Health).

On the topic of ambiguous text, Olson recommended looking at clues in the rest of the text to decipher the intended meaning and querying the author in cases of uncertainty. He presented numerous real-life examples of manuscript ambiguity and their practical solutions.

With regard to consistency, editors must confirm data are formatted and presented similarly so parallel comparisons can easily be made. Editors should also verify

whether numbers and percentages add up or match their counterparts. However, Olson advised editors to always consider the context of the information prior to issuing an author query concerning an incorrect total; for example, there are cases where the percentages do not need to add up to 100 percent (i.e., they do not represent a total).

It is also the duty of an editor to reduce redundancy in manuscripts, thereby making the paper easier to read. When removing words, it is imperative not to change the meaning of the statement—this goes for other aspects of manuscript editing as well. Olson also provided several examples of redundancy, including sentence wordiness (solve this with restructuring) and word duplication (e.g., MRI imaging—"imaging" is duplicated).

Olson discussed proper word usage and included several more examples to illustrate the main principles: it is best to avoid jargon and aim for clarity. Also, editors should help authors avoid unnecessary adjectives such as "nice" or "exemplary" and keep terminology simple (e.g., use "address" instead of "tackle").

To conclude, Olson also incorporated a segment on verb tense, including present, past, present perfect, and future, and he described and demonstrated general rules for when to use each tense. For many of the examples throughout his presentation, Olson first queried the course participants to see what they thought the problems were with the example before he explained the solution; this was an excellent way to actively involve the course participants.

Olson's presentation was followed by small-group roundtable discussions of how to handle difficult situations a manuscript editor may face. These scenarios centered on what to do when an author has a particular question, concern, or problem. Through group discussion, the course participants learned a great deal about how different journals and editors manage these issues.

Word Tips for Editors

MODERATOR:**Rachel DiGiammarino**

Client Services Manager
Sheridan Journal Services
Waterbury, Vermont

Peter J. Olson

Senior Copyediting Coordinator
Sheridan Journal Services
Waterbury, Vermont

SPEAKERS:**Elizabeth Blake**

Director of Business Development
Inera Inc.
Belmont, Massachusetts

REPORTER:**Resa Roth**

Freelance Editor
University of Washington Yeast
Resource Center
Seattle, Washington

Elizabeth Blake opened by explaining the history of Word Tips for Editors: CSE has offered this session since 2003 and presenters have compiled at least four hours of material on this topic over the years. Blake presented the “greatest hits” in the 2017 session. She covered many of the same tips and tricks offered in the short course (see the report on the Short Course for Manuscript Editors for this information).

Blake demonstrated how to personalize Word using Word Options, customize the ribbon and Quick Access Toolbar, apply editing shortcuts, and use efficient document navigation. Editors can use right-click to explore even more customizations, including the status bar at the bottom of Word. Additionally, some keyboard shortcuts include the use of Ctrl + Y (or F4) to redo the last action and Ctrl + Z to undo the last action. It can also be helpful to turn off unused

tabs, create new tab groups, or change the tab order. Above all, she encouraged editors to explore all of the Options in Word (File → Options).

For the second portion of the lecture, Peter J. Olson discussed tables and table editing specifically. He first outlined the purposes of tables within a manuscript: they support the author’s conclusions; provide a concise way of viewing study findings; and highlight relationships between data, including trends. Olson also emphasized the need for editors to ensure tables are concise and compact. He recommended using abbreviations within the table to save space (terms must be defined adjacent to the table) and reviewing table titles and using straddle headings or combined columns where appropriate. A manuscript editor should also look at the clarity and consistency of the table itself: footnotes should be used to explain certain data findings and these explanations should be presented consistently and clearly. Last, editors should make sure headings are not cluttered by extraneous information—it should be consolidated or made into a footnote.

To assist with table editing, Olson also included a brief demo session where he covered the following aspects of Word: the use of shortcuts; manipulation of rows, columns, and cells (including aligning decimals and text conversion); and use of various text commands as they pertain to tables (e.g., use Shift + F3 to change case).

Scholarly Publishing Developments to Watch

Tim Cross

"It is not the strongest or the most intelligent who will survive but those who can best manage change."

—Charles Darwin

For those of us involved in the endeavor of scientific editing and publishing, it's not overstating the case to say we are experiencing monumental changes on every level of scholarly communication at a pace we've never seen before. At times we struggle to make sense of what's happening around us. At other times, we are the authors of these changes ourselves, as we innovate and move in new directions.

Experience has proven it's dangerous to make predictions about the most important or meaningful trends evolving in our industry. Instead, what follows is a brief review of some interesting developments for science editors to watch over the coming year. Where they will lead remains to be seen.

It's dangerous to make predictions about the most important or meaningful trends evolving in our industry.

Improving Institutional Access to Content

One of the enigmas of problem solving is how setting out to solve one problem can unearth another. This is the case with Sci-Hub, a well-known pirate site that has used educational institutional proxies it obtained to bypass publisher paywalls and make more than 60,000,000 scientific articles freely available to the world. It's probably not a surprise that some advocates have cheered it on as a champion for disadvantaged researchers while publishers condemn it as a criminal enterprise. But it was a surprise to find researchers at universities in the United States with legal access to content at their home institutions downloading articles from Sci-Hub because of its faster and simpler user experience. As libraries and publishers face the challenges of fighting piracy, another problem has come to light that may lie closer to home. The scholarly publishing community has come to realize serious attention

needs to be paid to streamlining authorization to access content at the institutions where researchers work, in a way that also protects user privacy and defends against security breaches of institutional data.

A big step forward in addressing this reality is the launch of RA21: Resource Access in the 21st Century, a joint initiative of the International Association of Scientific, Technical, and Medical Publishers and the National Information Standards Organization "aimed at optimizing protocols across key stakeholder groups, with a goal of facilitating a seamless user experience for consumers of scientific communication."¹ Recognizing the use of Internet protocol addresses to authorize content access is no longer a functional mechanism, it seeks to "align and simplify pathways to subscribed content across participating scientific platforms"² and remove the barriers that prevent a move to a more functional system based on Security Assertion Markup Language federated authentication technology. In this effort, the scope of RA21 is focused on determining best practices, not the design of specific tools or practices. The initiative is currently in the pilot phase, which is expected to be completed by late 2017 or early 2018.

Continuing Efforts to Battle Predatory Publishing

One of the unfortunate unintended consequences of the continually evolving open-access journal has been the appearance of an unwanted player on the scene: the predatory publisher. We can argue whether this is a temporary side effect that can be mitigated at some point, a serious flaw that's baked into the equation, a socioeconomic problem, or the inevitable outcome of the enormous pressure on researchers to publish—but the most practical course seems to be to accept the presence of predators in our midst and find proactive solutions to identify and combat them. Ultimately, editors, researchers, and legitimate publishers will all be better off if we can design safeguards and educate authors.

One effort to address the problem was the "Beall List of Predatory Journals and Publishers," which took the blacklist approach to identifying possible and probable predatory publishers. This approach was not immune to controversy, of course, and the list generated fair numbers of both supporters and detractors. Looking at this problem from a different angle, Cabells International has taken the approach of launching "The Journal Whitelist." Rather

TIM CROSS is the Business Development Manager at Westchester Publishing Services

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than a blacklist that attempts to identify bad actors, “The Journal Whitelist” is an invitation-only, curated list of more than 11,000 academic journals that bases inclusion on a set of criteria and annual audits, covering the areas of audience, relevance, sponsorship, quality, peer review, fees, policies, publication practices, and integrity.³ The Cabells list joins an expanding array of resources for author and editors, which includes Think. Check. Submit., a campaign designed “to help researchers identify trusted journals for their research,” and a plethora of educational efforts by universities and libraries: for example, the “Guide to Scholarly Writing, Publishing, and Research Impact” posted by the Newton Gresham Library at Sam Houston State University.⁴

Artificial Intelligence in the Editorial Workflow

The Chan Zuckerberg Initiative acquisition of Meta⁵ earlier this year and the emergence of products such as Yewno Discover and Yewno Earth⁶ have ramped up interest in the scholarly community as to how the technology of artificial intelligence (AI) might be used to support publishing and editing processes. Although this may convey scary images of a robot replacing a journal’s entire editorial staff, publishing is not like automobile manufacturing. Machine learning, smart software, computational linguistics, and other forms of human-assisted AI that work at a scale or speed that humans cannot will simply provide efficiencies that many editors will find quite beneficial.

In the big picture, there is excitement about the ability of AI to drive search and discovery, uncover patterns and relationships in large collections of scientific data, automate metadata creation, and even predict citations. In the realm of science editing, AI is a powerful tool already being used in very practical ways to detect plagiarism and image manipulation, interrogate data for the identification of potential peer reviewers, and detect data alteration or fabrication. As the saying goes, the possibilities from here are limited only by our imaginations.

The possibilities from here are limited only by our imaginations.

Changing the Publishing Dynamic with Preprints

Much has been written about the explosion of preprint server launches over the past couple of years. Building on the successful arXiv model, which concentrated on physics and later expanded into fields such as mathematics and astronomy, we are now seeing preprint repositories supporting a range of communities from biological and medical sciences, chemistry, and biology (PeerJ PrePrints, ChemRxiv, and BioRxiv, respectively) to psychology (PsyArXiv) and agriculture (AgriXiv) and many others. Arising from dissatisfaction with lengthy publication cycles and perceived obstacles to the dissemination of research, preprints have evolved as a sort of grass-roots movement, functioning in parallel with public access and open science trends. Scientist-driven groups such as Accelerating Science and Publication in Biology aim to embrace journals, funders, societies, and junior and senior scientists as equal partners in the “initiative to promote the productive use of preprints in the life sciences.”⁷ The effects on these stakeholders are already beginning to be felt.⁸ As preprints inevitably begin to be widely integrated into publisher and editorial workflows, how will peer review, manuscript submission, article citations, and funder data be affected, and how will they evolve?

Charles Darwin claimed that survival depends on the ability to manage change. The adoption of federated authentication for content access, efforts to battle predatory publishing practices, the use of artificial intelligence, and the effect of preprints will be interesting developments to watch as they alter the scholarly publishing landscape in the coming years.

Links

1. <http://www.stm-assoc.org/standards-technology/ra21-resource-access-21st-century/>
2. <https://ra21.org/index.php/what-is-ra21/>
3. <http://www.cabells.com/selection-policy2>
4. <http://www.shslibraryguides.org/publish/predatory>
5. <https://meta.com/>
6. <https://about.yewno.com/>
7. <http://asapbio.org/>
8. <https://scholarlykitchen.sspnet.org/2017/04/18/stars-aligning-preprints/>

On Location, It's a Take!

Colleen M Sauber

Lighting was set, reflecting screen in place, camera on its tripod, music playing. Alec Tremaine Photography was on site at the 2017 Council of Science Editors (CSE) conference in San Diego and ready to roll with attendee portraits. After a successful run at the Denver conference last year, Alec Tremaine, owner of the 7-year-old company, was a known entity to many attendees. That year, Alec was the star of many conversations, including chats at award luncheon tables. His demeanor, style, and ability to make his subject feel comfortable were much appreciated.

Alec aims to provide for his clients "something that truly depicts them. We wanted to leave them with more of an experience, not just a photo—that it's enjoyable." Music is always part of his photo shoot. "I will have them choose their music if they're more nervous. If they control their music, they have something special for them" personally. Left to Alec, the music is an upbeat selection because on site, "you need a little beat in the background."

Alec's company specializes in on-location photography, and the 2016 CSE conference was "the first time we took our approach to a conference experience," Alec says. CSE's Tim Bennett had seen Alec Tremaine Photography online at headshotcrew.com and contacted Alec through Head Shot, of New York, Alec explains. "Tim asked whether we'd be interested to take the job."

To a location, Alec and his coworker, Sean Carroll, bring their own equipment, fitting it in three large bags. "We can do it in about two bags, but we like to come prepared. I like to have extra tools. Everyone's face is different; everyone's complexion is different. White skin will reflect, black skin absorbs." In this aspect, Alec can craft the shades to catch the person in best light.

He has always enjoyed portrait photography. A while ago, a friend acknowledged his skill saying, "I think you're a head-shot photographer." The comment is definitely accurate; for Alec, "shooting head shots is my biggest passion." He adds, "My favorite part of my job is to have the ability to get someone to trust you. Some people take more time, some don't . . . Even the overly extroverted and confident still want to look their best and find that position. Sometimes they see themselves differently, and I want to portray them as they are." If they wear glasses more than



Photo sample from Alec Tremaine Photography.

60% of the time, Alec recommends they wear glasses for the shoot, to appear the way they usually look.

At a conference, a photo shoot that is given 2 hours in the company studio is allowed just 5 minutes on location. Working fast and efficiently is the name of the game.

Observers of Alec at work in Denver in 2016 and in San Diego in 2017 can attest to his skill in putting people at ease. He may give a sincere compliment about a person's eyes. He pays attention to the hair, sometime gently fixing an unruly stray and adding a spritz or two of hair spray. He shoots a series of poses, smiles, and lightings. "When you see someone in their shells, [you know] there is something that makes them excited," Alec says, and he strives to bring that something out and capture it in the head shot. In his effort to put subjects at ease, he might shoot while they're still laughing. With a smile, he says, "I get to see the lover in you, the serial killer in you, the mother in you, the father in you."

Afterward, Alec and his clients look at their photos. If they hesitate when choosing which is the best shot, Alec will help filter down the options. They might narrow their choice to two shots. Then, when Alec sends his work for downloading after the conference, they see both picks for the final selection.

One photo subject was John Sack, founding director of HighWire Press, Inc. "I get asked every other month, 'Do you have a head shot?' I have head shots, but they're old, from before I had gray hair." As a CSE conference speaker, John needed a head shot a week earlier. A coworker took eight cell-phone photos, and John chose the one that

ALEC TREMAINE Photography can be found at www.alectremaine.com

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looked best, placing it on a flyer about his presentation. Of the shoot in San Diego, he says, "I thought, 'This is a great idea!' It's inexpensive; it's a nice service." He adds, "Alec did a credible job—he knew how to do it. He didn't ask me to pose; he posed me. He had it worked out." In 5 minutes, John had a photo he liked—complete with a smile *and* his gray hair.

Unlike many companies, Alec Tremaine Photography doesn't stamp its photos. "In theory, I could," Alec says.

"But it's your face; it's not mine. There's no reason for me to stamp, and I feel like it's distracting sometimes."

Alec seems a natural to photo shoots, which have taken him across the country and to as exotic a location as Cape Town, South Africa. Through all his experiences, he loves what he does. "From an emotional standpoint, the most beautiful thing in the world is when one is themselves. The best thing about my job is to let people be their true selves—true to self and true to nature—and it's all captured behind the glass."

Gatherings of an Infovore*

Barbara Meyers Ford

News about Journals

Many *Science Editor* readers are involved in journal publishing, and by extension, many are involved in publicizing their journals—be it through a formal media organization or their own efforts to get important papers to the right people in the press. For this column, I'm turning our attention to what people in the press are saying about journals.

Certainly our own industry publications (such as *Science Editor*, the *Scholarly Kitchen*, *PSP Links*, and *NFAIS Advances*, to name a few) cover important advances as well as current controversies. I find it interesting to see how our industry is perceived by those reporting on how we go about the act—or art (or business)—of journal publishing.

What follows is a collection of news stories from different sources touching on several long-standing concerns as well as new challenges about which we in journal publishing need to know. If I've done my job well, you should find a new nugget of information, or perhaps even two nuggets, about the most recent press coverage of the 350-year-old business of journal publishing.



Manuscript exchange image by Charlie Ripple.

MECA—A new manuscript exchange initiative

<https://scholarlykitchen.sspnet.org/2017/08/17/meca-new-manuscript-exchange-initiative/?informz=1>

Two studies suggest trouble ahead for paywall journals

<https://mtvnnews.com/two-studies-suggest-trouble-ahead-for-paywall-journals/124163/>

BARBARA M. FORD, DBA, Meyers Consulting Services, is also Director of Marketing and Communications at the National Federation of Advanced Information Services. (NFAIS; www.nfaais.org)



Image: Google

"Almost half" of recent research papers now open access

Extent of freely accessible literature could "tip the scales" for libraries to cancel subscription packages, says study
<https://www.timeshighereducation.com/news/almost-half-recent-research-papers-now-open-access>

Soon, nobody will read academic journals illegally, because the studies worth reading will be free

<https://qz.com/1049870/half-the-time-unpaywall-users-search-for-articles-that-are-legally-free-to-access/>

Pirate website Sci-Hub is so big, it will bring down the journals

<http://www.iflscience.com/editors-blog/pirate-website-scihub-is-so-big-it-will-bring-down-the-journals/>

Spotlight on Peer Review



Peer review 2030: Report looks to the future

Supported by BioMed Central and Digital Science, this report "examines how peer review can be improved for future

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generations of academics and offers key recommendations to the academic community."

<https://www.researchinformation.info/news/peer-review-2030-report-looks->

Journal tries crowdsourcing peer reviews, sees excellent results

<https://arstechnica.com/science/2017/06/journal-tries-crowdsourcing-peer-reviews-sees-excellent-results/>

Peer review is essential to good science—It's time to credit expert reviewers

<https://www.theguardian.com/science/2017/jun/01/peer-review-is-essential-to-good-science-its-time-to-credit-expert-reviewers>

Bringing a "trust but verify" model to journal peer review

<https://phys.org/news/2017-07-journal-peer.html>



Reviewing peer review: London's Birkbeck gets second Mellon Foundation grant

<https://publishingperspectives.com/2017/07/peer-review-birkbeck-mellon-foundation-grant/>

Do peer-review models affect junior doctors' trust in journals?

<http://blogs.biomedcentral.com/bmcblog/2017/07/04/do-peer-review-models-affect-junior-doctors-trust-in-journals/>

Chinese scholars "win up to £127,000" for papers in top journals

Analysis reveals extent of reward system for international publications, which could be distorting scientific incentives. This article has some excellent real-world figures!

<https://www.timeshighereducation.com/news/chinese-scholars-win-ps127000-papers-top-journals>

Academic publishing meets capitalism

"I suspect few academics would want to admit this, but the Open Access movement is really capitalism at work: authors and journal editors are discovering that they can provide a product of similar or better quality for less. If they do, they will take over the market from the old academic publishing model. And they'll deserve to." Charlie Martin, August 7, 2017

<https://pjmedia.com/lifestyle/2017/08/07/academic-publishing-meets-capitalism/>

Cash bonuses for peer-reviewed papers go global

This article contains a great infographic of how much individual countries pay academics when their papers are published in top-tier peer-reviewed journals.

"Authors who publish peer-reviewed papers in top-flight journals can receive hefty cash payments, depending on where they live. An informal survey (<http://www.sciencemag.org/sites/default/files/incentives%20spreadsheet%20final.xlsx>)—by no means comprehensive—turned up lucrative incentives paid by institutions or government agencies around the globe." Alison Abris, Alison McCook, Retraction Watch, August 10, 2017

<http://www.sciencemag.org/news/2017/08/cash-bonuses-peer-reviewed-papers-go-global>

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

Enrolling Brazilian Editors in CSE's Certificate Program: A Successful Initiative

Bruna Erlandsson

Brazil ranks 24th among countries that publish the most in high-impact journals, according to Nature Index.¹ This fact highlights the potential for scientific production in the country. However, the dissemination of research data is unfortunately not always the main motivation behind this production. Many authors publish to strengthen their chances of receiving support from funding agencies or to advance in their academic careers (or both) and consequently focus on increasing their number of published articles to the detriment of quality. This attitude may result in selecting a journal for each manuscript according to subjective criteria, such as the time between submission and publication. Given these factors, some institutions in Brazil have come to believe the process of disseminating their scientific output can be accelerated by creating their own journals.

Although estimating the number of Brazilian scientific journals is difficult, it is known to be quite large. According to the Instituto Brasileiro de Informação em Ciência e Tecnologia (Ibict)—the local institution responsible for ISSN registration—the number of Brazilian journals exceeds 20,000. However, few of them achieve an international standard, and some do not publish longer than a few years. The Table shows a small number of Brazilian journals found in some relevant directories, platforms, and associations.

Location?	Number of Brazilian Journals Listed
OJS (Br) ²	1,800
Directory of Open Access Journals ³	1,021
Scopus ⁴	448
SciELO Brasil ⁵	358
ABEC Brasil ⁶	337
Redalyc ⁷	240
WOS/JCR ⁸	129

Being indexed in relevant international platforms became the “quality seal” for a Brazilian journal, making it a high-priority goal for every editor in chief. To reach this goal, the journal must fulfill a series of requirements, which is possible only if it has a committed editorial team ready and able to understand the nuances of this important activity. Further complicating this pursuit is the fact that most Brazilian journals are not produced by known international publishers; rather, the whole workflow is the editor-in-chief's responsibility.



Prof. Dr. Ana Marlene Morais

“This certificate program caters to the need of a Brazilian scholarly community and, seeing the effectiveness of the program and the impact on the careers of those who take advantage of it, we plan to have this certification as a qualification badge for journals in a very close future.”

—Prof. Dr. Ana Marlene Morais (vice president of ABEC Brasil; coordinator and current student of ProCPC)

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Under these circumstances, the editor in chief's responsibilities have increased, and he or she must thoroughly understand tools and management and possess the flexibility to overcome obstacles that may appear during the evaluation, selection, and publication of an article. Under pressure to speed up the workflow, cases of misconduct are expected to grow, and thus, the editor in chief must identify, confront, and punish cases of plagiarism and deal with their consequences. The editor in chief must also learn about copyright and use of appropriate licenses, not to mention all the effort required to obtain financial support and manage resources through article-processing charges, subscriptions, or, for non-open-access publications, access fees. An additional step is disseminating articles through social media, using inviting, appropriate language to attract the attention of the general public. Furthermore, editors in chief need to take care of their staffs by motivating, encouraging professional development, and preparing suitable individuals to eventually transition into the position of editor in chief.

The editor-in-chief role is usually delegated to a researcher who excels in academic activities, with substantial experience in article publishing, that is, with a respectable h-index (a measure that aims to describe the scientific productivity and influence of a researcher). However, such achievements do not guarantee the researcher has the skills required for the editor-in-chief role; these are acquired empirically, because no specific training courses are available in Brazil.

"In this program, I had the chance of understanding the challenges and particularities of the national and international scientific publishing scenario."

—Prof. Dr. Herbert Kimura (editor in chief of *Revista de Administração Contemporânea*; first certified by ProCPC)

Against this background, the Associação Brasileira de Editores Científicos (ABEC Brasil), a scientific society founded in 1985, sought an international partnership to offer an opportunity for Brazilians to attain the necessary expertise to perform well, and the CSE Publication Certificate Program proved to be a perfect fit. Angela Cochran (past president of CSE) and Ana Marlene Morais (vice president of ABEC Brasil) promoted a liaison between CSE and ABEC Brasil and, through a memorandum of understanding, a hybrid program called the Scientific Certification Program (ProCPC) was created. It soon became apparent that not only the editor in chief but all editorial staff would benefit from this program, which was designed for anyone with a strong interest in scholarly publication who is looking for an opportunity to learn more or enhance his or her skills. The actual audience is mixed, and editors in chief constitute the



Prof. Dr. Herbert Kimura

largest percentage of participants, followed by librarians and editorial assistants.

Participants are expected to complete all the requirements, which involve webinars, short courses, and conference attendance, in five years, after which a final project based on what was learned is presented. Via ProCPC, most requirements can be fulfilled in Brazil, a significant benefit to participants. Also, in 2015, CSE certified ABEC Brasil to manage short courses in the country, making the program even more affordable for the participants.

Launched in 2015, the program has had an excellent response in the Brazilian scholarly community, with a total of 53 students, two of whom were certified this year—Professors Simone Appenzeller and Herbert Kimura, editors in chief of *Revista Brasileira de Reumatologia* and *Revista de Administração Contemporânea*, respectively.



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Acknowledgments

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Links

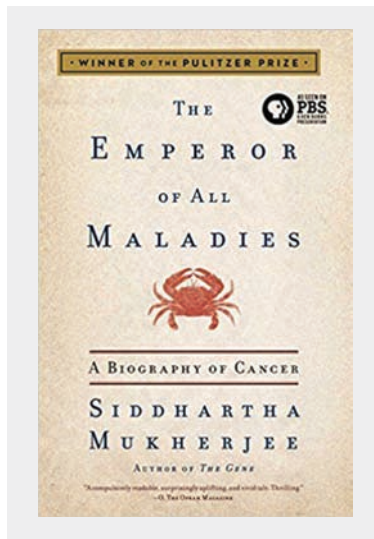
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Book Review: *The Emperor of All Maladies: A Biography of Cancer*

Carolyn deCourt

The Emperor of All Maladies: A Biography of Cancer. Siddhartha Mukherjee. New York: Scribner, 2010. 592 pages. ISBN 978-1439181713.



Cancer is an expansionist disease; it invades through tissues, sets up colonies in hostile landscapes, seeking “sanctuary” in one organ and then immigrating to another. It lives desperately, inventively, fiercely, territorially, cannily, and defensively—at times, as if teaching us how to survive. To confront cancer is to encounter a parallel species, one perhaps more adapted to survival than even we are.

—Siddhartha Mukherjee

This book is a chilling read and brings cancer into a light most of us don't want to think about. The phrase “out of sight, out of mind” is quickly dismissed after reading this book, as it goes into detail regarding one of the deadliest

diseases known to mankind. As someone without a heavily scientific or medical background, I found this book a lot to take in and comprehend but well worth it in the end. I had to read several sections multiple times to digest fully, and it was one of the most difficult books for me to sit down and read.

Many words come to mind after reading this book, including *long*, *detailed*, *intense*, *thought provoking*, *upsetting*, and *informative*. The word that I think is most accurate, though, is *informative*. Siddhartha Mukherjee filled the pages of this book with all of his cancer knowledge and many of his experiences. To read this book is to gain a better understanding of cancer and to see how far medicine has come.

The start of the book pulls you in with a story of a mother who learns she has cancer, and it vividly shows the emotions that accompany such a discovery. From this first story, Mukherjee dives into the history of cancer, discussing and detailing all of the old theories and procedures, many of which would be considered horrifying if practiced today. He reveals that cancer has been around much longer than we knew, providing examples of exhumed corpses from ancient Egypt that showed signs of cancer. Once mankind realized cancer was fast moving and could take over the body, the historical treatments were zealous and intense, with the goal of removing as much of the affected body parts as possible.

The Emperor of All Maladies captures the interest of the reader and has proven to be a book I will always remember—it sticks with you even after you finish it. Siddhartha Mukherjee refers to the battle with this disease as “the war on cancer,” and given the yearly increases in cancer diagnoses in our society, this is something most of us can agree with or relate to in some way. Science and medicine have come a long way in the past few decades, and new treatments continue to be discovered and tested. This war is far from over, and with the knowledge from this history, we should feel more equipped to face it head on.

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