DECEMBER 2022 • VOLUME 45 • NUMBER 4

# 

A PUBLICATION OF THE COUNCIL OF SCIENCE EDITORS

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GENDER IMBALANCES ACROSS THE PUBLISHING SYSTEM WAYS TO INTEGRATE DEI INTO SCHOLARLY PUBLISHING COMMUNICATING EXCITEMENT ABOUT SCIENCE TO KIDS



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DECEMBER 2022 VOLUME 45 • NUMBER 4

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**On the cover:** The image on the cover of this issue of Science Editor shows "slow motion photography of a milk droplet hitting a pool of coloured water, the dynamic movement and motion of the water is seen when the milk hits the surface and colours mix." Credit: Milk sculpture. Stefan Eberhard. Wellcome Collection (CC-BY-NC). https://wellcomecollection.org/works/xu5cdqwu

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## How Long Are We Going to Accept Stark Gender Imbalances Across the Publishing System?

#### Ana-Catarina Pinho-Gomes and Mark Woodward

#### Introduction

The underrepresentation of women at multiple levels of the publishing system has been systematically and compellingly documented across diverse scientific fields over the years.<sup>1</sup> Overall, women account for about 1 in 3 first authors and 1 in 4 last authors of scientific papers.<sup>2,3</sup> Although fields such as the humanities, psychology, and the social sciences have long been considered more friendly to women, in fields such as science, technology, engineering, and mathematics (STEM), men disproportionately publish more manuscripts and in more prestigious journals, irrespective of the specific field.<sup>4-6</sup> Furthermore, the proportion of women has been consistently found to be lower in last authorship than in first authorship positions.<sup>7,8</sup> This clearly illustrates the concept of the "leaking pipeline," which describes how gender inequalities are magnified as we ascend the academic ladder. The underrepresentation of women among authors is replicated among editors and peer reviewers. For instance, our recent study in a sample of journals published by the British Medical Journal Publishing Group found that women accounted for about 1 in 3 peer reviewers and editors and 1 in 5 editors-in-chief.9 Five journals did not even have a single woman in their editorial boards. This is in keeping with previous evidence from other scientific fields and compellingly demonstrates how pervasive gender inequalities are across the publishing system.1,10-12 In the current hypercompetitive academic environment, women's underrepresentation across the publishing system is likely to undermine their career progression in a vicious cycle where women's disadvantage begets disadvantage. This may

ANA-CATARINA PINHO-GOMES (ORCID: 0000-0001-9895-1493) is with the George Institute for Global Health, Imperial College of London, UK; MARK WOODWARD is with the George Institute for Global Health, Imperial College London, UK and the George Institute for Global Health, University of New South Wales, Sydney, Australia.

Opinions expressed are those of the authors and do not necessarily reflect the opinions or policies of the Council of Science Editors or the Editorial Board of Science Editor. explain why women are less likely to obtain research grants and be promoted to senior academic positions, which may ultimately lead to dropping out from academia.<sup>13</sup> Despite the myriad studies documenting stark gender inequalities in the publishing system over the past decades, progress has been slow, or even absent, in most scientific fields.<sup>6,7,14</sup> It is, thus, pertinent to reflect on the underlying causes and potential solutions.

### Why Are Women Underrepresented in the Publishing System?

In this scenario, it is reasonable to ask whether women truly represent half of the world population-have the demographers just got it wrong? In fact, detractors of gender equality have argued that women's representation in the publishing system should be compared with women's representation in the source population. Although it is, in practice, impossible to determine the source population for the authors, editors, and peer reviewers of scientific journals, considering how women's representation has evolved in academic institutions may be instrumental to understand the root causes of women's underrepresentation in the publishing system. Albeit to different extents and at varying pace, women have made substantial strides in education and the workplace worldwide.<sup>15,16</sup> In academia, a recent U.S. study in the showed that women's representation has been increasing, even if women remain broadly underrepresented.<sup>17</sup> Indeed, the majority (64%) of tenuretrack faculty are still men, with substantial heterogeneity by area of study. Women's representation has been consistently the lowest in mathematics and computing, and natural sciences, and the highest in education and medicine/ health. Importantly, this study demonstrated that women's representation among new hires has remained flat over the past decade, and newly hired faculty are still more likely to be men, thus suggesting that gender parity in academia, and especially in STEM fields, will not be achieved without further changes in women's representation among new faculty. Sadly, this situation is not specific to the United States. In the UK, despite an increase from 40% to 47% in women's representation among academic staff between 2003 and 2021, women remain underrepresented, particularly in STEM fields, senior management, and professorial roles.<sup>18</sup>

Notwithstanding the importance of promoting gender balance in academic institutions, this is not a silver bullet to fix the longstanding gender inequalities in the publishing system. Successful policies and initiatives to increase gender diversity in academic institutions, such as the Athena Scientific Women's Academic Network (SWAN) program, which has been supporting and recognizing higher education institutions in advancing the careers of women since 2005, have not yet translated into significant improvement in women's representation in the publishing system.<sup>19</sup> In addition, a recent study of 1.5 million academics suggested that the relative increase of participation of women in STEM fields over the past 60 yr has not reduced the gap in women's academic recognition and representativeness.<sup>20</sup> The lack of substantial improvement in women's representation among authors, editors, and peer reviewers over the past decade, in comparison to the progress made in academia and research in general, thus hints at additional causes.

The underlying reasons for the persisting women's underrepresentation across the publishing system are likely manifold and involve vicious cycles that have proven hard to break. On one hand, gender bias, even if unconscious, may prevent women from becoming authors of scientific papers, particularly as last authors, as these tend to be senior and/or principal investigators. This, in turn, may result in women being less likely to be invited as peer reviewers and editors, as these are typically senior experts in their fields with outstanding publication records.<sup>21</sup> Women's underrepresentation as peer reviewers and editors may, thus, be both a symptom and a cause of broader underrepresentation among authors and in senior positions in the academic and publishing systems as taking part in the peer review and editorial processes can be a stepping stone to senior and leadership roles, which themselves increase success in obtaining funding and highimpact publications.<sup>22,23</sup> Therefore, gender bias can have a pervasive effect that permeates through the academic into the publishing system and vice-versa. Furthermore, affinity bias may synergise with gender bias to perpetuate women's disadvantage. Previous studies have demonstrated that men are disproportionately overrepresented in editorial boards, and this is associated with a lower representation of women as authors and peer reviewers in comparison to men.<sup>24-26</sup> Although association does not prove causation, editors seem to have substantial same-gender preference when selecting peer reviewers irrespective of whether they are women or men.<sup>27</sup> Entrenched biases may, hence, underpin women's lack of power and ability to influence even when there is apparently gender parity.

On the other hand, barriers to women's participation in academia and research may not only reduce their ability

to publish but also to accept invitations to become peer reviewers and editors. Deeply entrenched gendered roles in our contemporary societies mean that women still bear the brunt of homemaking, childcare, and other unpaid care roles.<sup>28,29</sup> Furthermore, women undertake a greater share of internal service in academic institutions (e.g., activities related to faculty governance, faculty recruitment, evaluation and promotion, student admissions and scholarships, program supervision, development and marketing, internal awards) in comparison to men.<sup>30</sup> Taken together, these unpaid commitments reduce women's availability to engage with scholarly activities with unscheduled and tight deadlines. Although a recent study showed a minimal difference between women and men's acceptance of peer review invitations (37% for women vs. 41% for men), the decline observed during the COVID-19 pandemic in acceptance rates for women, but not for men, suggests that the greater burden of caring and family responsibilities posed on women, which was exacerbated during the pandemic, may jeopardize women's ability to commit to peer review or editorial roles.<sup>31</sup>

#### What Can We Do to Fix the Longstanding Gender Imbalances in the Publishing System?

Although gender imbalances in the publishing system have been known for decades, serious commitment to stem deep-rooted gender inequalities has been lacking. This may be, at least in part, because there is no magic wand for such a complex problem. On the contrary, solutions need to be multipronged and involve multiple stakeholders, hence requiring significant investment of time and resources. On one hand, scientific journals and publishers should adopt transparent policies and practices on gender equality. These may include establishing gender quotas for editors and peer reviewers, which although controversial because invitations for these roles should be based on merit rather than gender, could have a remarkable impact on women's representation akin to that seen in politics and business.<sup>32</sup> Nonetheless, evidence from a researcher-led journal showed that senior editors and authors were more likely to select men than women as reviewing editors, even after correcting for the gender imbalance in the pool of reviewing editors available.<sup>33</sup> This clearly illustrates that gender quotas should be one among many tools in the "gender equality toolkit," which should also include providing training to editors and other editorial staff on inclusion, diversity, and unconscious bias,<sup>34</sup> as well as ensuring digital technologies, such as algorithms used to identify potential reviewers and editors, do not discriminate against women, as has been shown for other artificial intelligence search algorithms.<sup>35</sup> In addition, these policies and practices should be accompanied by

greater transparency and accountability by making real-time data on gender statistics for submissions and publications, reviews, and editorial functions at all levels publicly available.

On the other hand, academic institutions need to fix the longstanding "leaking pipe" in the academic ladder. This requires worldwide implementation of cross-cutting gender-friendly policies, such as the Athena SWAN program.<sup>36</sup> Enabling women to reach their full potential and climb to top positions in their fields is key to ensure they are proportionately represented across the publishing system, particularly in positions associated with seniority and prestige. This will, in turn, trigger a virtuous cycle where women's representation in the academic and publishing system, particularly at senior and leadership level, are mutually reinforced. More broadly, researchers and academics in all fields have a pivotal role to play in addressing barriers that hinder women's careers. Although it is arguable that homemaking and caring responsibilities should be fairly shared between women and men, this may take generations to achieve. In the meantime, digital technology enhances work flexibility and allows people to conciliate research with other commitments, thus mitigating against the detrimental impact of gendered roles in our contemporary societies on their careers. Mentoring and role modeling may also be pivotal to empower women to breach through the glass ceiling to reach top leadership positions.<sup>37</sup> We all have a role to play in improving gender equality within our spheres of influence by exposing discrimination, uprooting gender biases, and promoting an environment where women can thrive.<sup>38</sup>

#### Conclusion

The wider benefits of gender equality for science have been compellingly demonstrated for women and men alike.<sup>39,40</sup> Indeed, a research community that is more inclusive, diverse, and representative, and works to ensure that everyone counts, is more likely to generate research that is universally beneficial and not limited by inequalities.<sup>41</sup> Lack of gender diversity means evidence published in the highest impact journals might be swayed in favor of topics or methods that are preferred by men and framed from their point of view, thus failing to account for the important perspective and priorities of women. It is high time that the scientific community, in general, and scientific journals/ publishers in particular, adopt policies and practices that promote women's inclusion and demonstrate accountability for steady and sustained progress towards gender equality. For as long as the academic and publishing systems are rigged against women, gender equality will remain a mirage to the detriment of science and, broadly, society welfare and wellbeing.

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## Recent Updates to CSE Recommendations for Promoting Integrity in Scientific Journal Publications:

7 Ways to Integrate Diversity, Equity, and Inclusion Into Scholarly Publishing

#### Leonard Jack, Jr, PhD, MSc

The Council of Science Editors' (CSE) Recommendations for Promoting Integrity in Scientific Journal Publications was first published in 2006, and the full document was updated in 2009 and again in 2012. In 2018, the CSE Editorial Policy Committee (EPC) began making updates on a rolling basis as new sections were added or existing sections updated to reflect new information or best practices. This updated method for amending the document allows for more rapid dissemination of its contents so that recommendations can be quickly put into practice in journal operations. In this column, the reader is advised of a recent update that provides guidance on the importance of advancing best practices in scholarly publishing. Content in this update, while condensed, was taken largely verbatim from the CSE's Recommendations for Promoting Integrity in Scientific Journal Publications. However, readers are encouraged to visit the full set of Recommendations for Promoting Integrity in Scientific Journal Publications at https:// www.councilscienceeditors.org/resource-library/editorialpolicies/publication-ethics/.

#### Introduction

The role of both intentional and unintentional bias in society, including in scientific publishing, is receiving increased

LEONARD JACK, JR, PhD, MSc (ORCID: 0000-0002-4342-5696), Co-Chair, Diversity, Equity, and Inclusion Committee, CSE, and Editor in Chief, *Preventing Chronic Disease: Public Health Research, Practice, and Policy*, Office of Medicine and Science, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.

The findings and conclusions in this report are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention. attention and discussion.<sup>1,2</sup> Content assessed for publication in scientific journals and articles eventually published are not immune from bias. In fact, bias against individuals because of their race, gender, religion, disability, education, institutional setting, career status, sexual orientation, spoken language, and other characteristics remains a pressing issue in scientific publishing.<sup>3</sup> Emerging diversity, equity, and inclusion (DEI) best practices are becoming increasingly important to promote equitable actions that advance diversity of disciplines, racial and ethnic diversity, institutional diversity, interdisciplinary fields, gender diversity, geographic diversity, and linguistic and cultural diversity,<sup>1</sup> as well as inclusion of perspectives represented by this diversity. This commentary provides a brief overview of new content in CSE's Recommendations for Promoting Integrity in Scientific Journal Publications regarding DEI best practices in scholarly publishing (Figure).

#### **Operationalizing DEI**

Journals can take steps toward achieving the important goals of DEI. In terms of *diversity*, journals should ensure diverse representation to provide feedback to the journal.<sup>4</sup> Efforts should be made to go beyond familiar and often more comfortable representation to ensure diversity among staff leadership, external review panels, associate editors, editorial board members, statistics review committee members, guest editors, peer reviewers, subject matter consultants, and journal leadership and staff members. Journals should strive to achieve and maintain a commitment to advancing equity by proactively working to expand representation and thereafter listening and then implementing action steps in response to feedback particularly from diverse persons and/ or those most affected by a practice, program, and/or policy, recognizing the contributions of all volunteers and staff, and providing a range of opportunities for others to lead and participate in key decision making.<sup>4</sup> Being just and fair by



Seven Ways To Integrate Diversity, Equity, and Inclusion into Scholarly Publishing

seeking feedback from a range of diverse persons helps to create open dialogue among various partners both internal and external to the journal.<sup>4</sup> Journals can ensure **inclusion** by taking proactive steps so that a range of individuals are and will continue to be part of discussions that identify a broad spectrum of ideas and perspectives.<sup>4</sup> Encouraging such participation and engagement may help journals prevent any one paradigm, belief, or perspective in the science and practice of their field to dominate a journal's decision making and, ultimately, the type of content it publishes.<sup>4</sup>

The following areas highlight some of the actions that can be taken to ensure DEI best practices and policies in scientific publishing:

- Establish accountability: Publishers, organizations, and journals must hold themselves accountable to become educated on effective ways to advance DEI best practices. Realistic DEI goals, objectives, and benchmarks to measure progress and opportunities for improvement should be established. Information collected to monitor progress should be transparent and used to provide updates to key individuals including the publisher (if applicable), the journal's readership, and the public.
- Develop DEI-related guidelines on conducting, reporting, and publishing scientific content on diverse racial and ethnic groups: It is important that journals work extremely hard to ensure published content does no harm and does not convey disrespect. One way to avoid this harm is for journals to provide clear guidance to authors on reporting of race and ethnicity in medical and scientific publications.<sup>3,5</sup> Guidance to authors should communicate that the reporting of race and ethnicity in published papers must not be provided

in isolation. Rather, reporting race and ethnicity should be accompanied by the reporting of other less acknowledged and less reported factors that contribute to shaping health outcomes. These less reported factors include structural and social determinants of health (e.g., forms of racism, disparities, and inequities).

- Publish intentional statement(s) to promote DEI in scientific publishing: One key action a journal can take to demonstrate a public commitment to these practices is to publish a statement. This statement should delineate the areas around which the journal intends to advance DEI principles in its publication practices and operations. The statement is usually generated by the publisher, organization, and/or journal's leadership. Such a publication memorializes a journal's commitment to transparency and can be used to provide updates on progress and on challenges encountered.<sup>6</sup>
- Ensuring fair representation among editorial boards, peer reviewers, authors, and journal staff: There has been increased attention on who has a role in influencing or helping to determine which authors and articles are selected for publication.<sup>4,7-10</sup> Journals have an important role in making improvements by increasing the diversity of membership in their editorial boards and among their associate editors, authors, and peer reviewers. Achieving these goals will require journals to actively work to identify and secure participation of individuals from diverse backgrounds and experiences who have the appropriate content expertise to serve in these capacities.
- Ensuring inclusive language in journal publications: There are several tools and resources that can assist journals in ensuring inclusive language is used in scientific publishing.<sup>11–13</sup> This can assist journals with incorporating inclusive and nonbinary language as part of their publisher's style guide and author guidance. Journals should become familiar with these resources and identify the most appropriate for use in publishing content in their journal. Using reliable resources on inclusive language is critically important for several reasons (see below).
- **Collecting demographic data:** Demographic data provide key metrics that make it possible to understand who is at the table helping to decide what is published, including journal leadership and staff and the individuals authoring submissions. Examples of demographic data that should be collected and reported include gender, age, race and ethnicity, education, geographic location, institution/affiliation, sexual identity, occupation, military status, disability status, and career status (early, mid-, and late career).<sup>3</sup> Journal leadership and staff must recognize the possibility of data misuse. Therefore, there is a need to establish and maintain safeguards to protect sensitive data being collected.

• Acknowledging progress, and missteps: A journal's readership may be the first audience to notice progress toward advancing DEI principles in a journal's day-today operations, whether it be an increase in meaningful participation of diverse participants such as guest editors or on editorial boards, or the use of inclusive language in publications. Along the way to achieving such milestones, there are likely to be mistakes made that will serve as valuable lessons. And finally, journals may release publications that unintentionally contain insensitive content that is viewed as offensive, stereotypical, and harmful to the journal's readership. To ensure transparency and build trust with their readership, authors, staff, and volunteers, journals should make it the norm to acknowledge not only progress achieved but also any missteps, including a sincere explanation of how and when missteps will be addressed and corrected.<sup>4</sup>

#### Conclusion

In closing, this new DEI section of CSE's Recommendations for Promoting Integrity in Scientific Journal Publications calls attention to resources available to assist journals at various stages of implementing DEI-centered activities. The following two DEI resources may be of use to journals:

- CSE Repository of Scholarly Resources on Diversity, Equity, and Inclusion: CSE has generated a compilation of guidance resources, documents, and other materials providing information related to furthering diversity, equity, and inclusion in scholarly publishing in six categories<sup>6</sup>:
  - DEI Committees of Trade/Professional Organizations in Scholarly Publishing
  - DEI and Peer Review
  - DEI Statements/Policies from Journals/Professional Associations/Publishers
  - Bias, Discrimination, and Racism
  - Data Collection on Diversity, Equity, and Inclusion
  - Reporting Sex, Gender, and Race in Publications
  - Inclusive Language Communication.

These resources are by no means exhaustive. Access to resources can be found at https://www.councilscienceeditors. org/resource-library/diversity-equity-and-inclusion-resources/.

2. Coalition for Diversity and Inclusion in Scholarly Communication (C4DISC): The C4DISC was founded by trade and professional associations that represent organizations and individuals working in scholarly communications.<sup>13</sup> C4DISC was formed to discuss and address issues of diversity and inclusion within our industry. Their website is located at https://c4disc.org/.

There are major themes reflected in this initial DEI section that will likely continue to evolve: establishing accountability; developing DEI-related guidelines on reporting, and publishing scientific content on diverse racial and ethnic groups and other minoritized groups; publishing intentional statement(s) to promote DEI in scientific publishing; ensuring fair representation among editorial boards, peer reviewers, authors, and journal staff; ensuring inclusive language in journal publications; collecting demographic data among those who touch the publishing process (authors, journal staff, editors); and acknowledging progress and missteps. This new guidance was developed with the goal of providing journals with impactful ways to advance DEI in their day-to-day operations. This new guidance can be modified and expanded upon based on a journal's unique direction, circumstances, and needs.

#### Acknowledgement

I thank the members of the CSE Editorial Policy Committee for their assistance with these updates.

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## CSE Recommendations for Standards for Critiques/Responses to Published Articles

#### Jill Jackson

Is it better to be criticized or to be ignored? In scholarly publishing, responsible debate, critique, and disagreement are important features of science, and journal editors should encourage such discourse.<sup>1</sup> When the CSE Editorial Policy Committee (EPC) recently decided to add a section on how to handle reader discourse to the CSE recommendations, I volunteered to take the lead in writing this new section, having worked closely on the policy for readers' comments and responses for Annals of Internal Medicine. I consulted the recommendations from the International Committee for Medical Journal Editors (ICMJE) along with resources from the Committee on Publication Ethics (COPE).<sup>2</sup> After much discussion and revision by the CSE committee members, Standards for Critiques/Responses to Published Articles has now been added to the recommendations. These standards are available at https://www.councilscienceeditors.org/ resource-library/editorial-policies/publication-ethics/ and summarized here.

In this new section, the Recommendations provides guidance for journals, journal editors, readers, and authors. The first section begins with journal responsibilities. Journals should provide readers a mechanism to comment on published articles. Often, readers will have questions about findings and conclusions in articles, and journals have a responsibility to respond to potential errors. Also, journals should make their policies clear: "Journals should make known their practice for handling correspondence in the information for authors or other relevant section."<sup>3</sup> The policies should address word count and reference citation limits as well as timeframes for submission of correspondence and should note if correspondence will be internally reviewed or peer reviewed.

Many times, correspondence about published articles can be less than collegial. It is important that editors screen correspondence for inappropriate or offensive language and/or harassment or personal attacks. Editors have the right to reject any correspondence for this reason or if the comment is irrelevant, is uninteresting, or lacks cogency.<sup>1</sup> Editors can choose to publish correspondence, also known as Letters to the Editor, in a section of the journal, or they can choose to post the comment online to the article only. Such commenting is not indexed in MEDLINE unless it is subsequently published on a numbered electronic or print page.<sup>1</sup>

Authors of correspondence should disclose any potential conflicts of interest at submission. It is important for authors of published articles to be made aware of correspondence and critiques of their published article, and they should be given an appropriate amount of time to respond to comments. In particular, if a comment suggests a potential error in the article, the author(s) of the article should respond in a timely manner, noting if there is a correction or providing clarity to the reader. If a correction is warranted, the author should work with the journal on the correction required, as outlined in the CSE recommendations on correcting the literature (https://www.councilscienceeditors.org/resource-library/editorial-policies/publication-ethics/3-5-correcting-the-literature/).

When an error is noted by the commenter and a subsequent erratum is published, the commenter may be acknowledged in the erratum for their help in discovering the error. Also, editors should give readers the opportunity to assess the points raised, and comment–reply exchanges should be published simultaneously.<sup>3</sup> CSE does not recommend posting comments on published journal articles to preprint servers, especially if the commenter would like to have their comment published along with an author response.

Comments on journal articles have changed drastically in the past few decades. Some of us may remember receiving typed or handwritten "Letters to the Editor" about a recent article. Oddly, I still receive these in the post at *Annals*, although it may only be once or twice a year. In the last 20 years, journals have moved toward an online version of correspondence that can be submitted more rapidly yet still screened before being posted. Some journals will consider those online comments for publication, whereas other journals may consider the comments to be a forum *(Continued on p. 135)* 

JILL JACKSON, is Managing Editor & Publishing Administrator, Annals of Internal Medicine.

## JAMA Fishbein Fellowship Offers Deep Dive Into Medical Editing

#### **Kelly Lenox**

Physicians who want to learn more about life as a medical editor have an unusual opportunity thanks to the Morris Fishbein Fellowship in Medical Editing<sup>1</sup> offered by the *Journal of the American Medical Association (JAMA)*. This fellowship, which has been offered annually since 1977, was designed to introduce physicians to all facets of editing and publishing a major medical journal. In this interview, two former fellows describe the experience and how it changed their careers.

Former Fishbein fellows Kristin Walter and Christopher Muth joined Kelly Lenox, from *Environmental Health Perspectives*, to discuss the fellowship. Walter was the 2020–2021 Fishbein fellow and is now a Senior Editor at *JAMA*. Muth, who is a Deputy Editor at *JAMA* and director of the Fishbein Fellowship program, was a Fishbein fellow in 2016–2017. Their responses have been edited for flow.

### Science Editor (SE): What drew you to apply to this program, which aims to teach physicians "the highest standards of medical-science evaluation and writing"?

**Christopher Muth:** While practicing as a general neurologist, I became interested in the Fishbein Fellowship to see if I could unite my interest in the liberal arts and strong attention to detail with my scientific training. The content of the scientific research is important, but there's also the piece of how clinicians are understanding and applying it. I was curious to learn how editors can help in the process of stating research findings in a clear and accurate way so those findings can be useful to the community at large.

KELLY LENOX, Associate News Editor, Environmental Health Perspectives.

Jonathan Schultz, Editor-in-Chief of *Science Editor* and Kristin Inman, science editor at *Environmental Health Perspectives*, also participated in this interview.

Opinions expressed are those of the authors and do not necessarily reflect the opinions or policies of the Council of Science Editors or the Editorial Board of Science Editor. **Kristin Walter:** In 2018, after working as a pulmonary/ critical care physician for 18 yr, I had the opportunity to assess what I wanted to do next in my career when I learned my practice was closing. I decided to pursue an interest in medical writing and editing, which had developed over the years of reading medical journals in my field. Plus, I was a history and literature major in college, so I'd always had that interest in reading and writing.

SE: It sometimes surprises me how many scientists have interests—and aptitudes—in writing and literature. Fishbein Fellows gain proficiency not just with writing and editing, but also with manuscript review and selection, peer review, issue makeup, and electronic publishing. Among that wide range of activities, what did you most enjoy, or what stayed with you?

**Walter:** My fellowship began with a 2-wk period of copyediting manuscripts. That was a valuable experience because I learned the terminology used at *JAMA*, and it set the tone for what I'd be doing the rest of the year. The fellowship showed me the whole range of what goes into publishing a manuscript—starting with reading the manuscript, deciding whether to send it for review, contacting reviewers, consolidating the reviewers' comments, presenting at the manuscript meeting, and ultimately making a decision about whether to go forward with the manuscript. I enjoyed seeing manuscripts move from the very beginning (submission) to publication. They tend to get a lot better through the process of revision.

**Muth:** The journal's editors are generally focused on deciding which manuscripts are interesting and important—which ones are of high quality. Editors work with authors and other editors on revisions, then after they click "accept," most are done until they see the final product. The fellowship shows you all the steps in between, so you can understand not just the line-by-line editing but also layout and how the tables and figures are formatted. It really helps to understand the timeline, say, when you're trying to expedite publication of a particular article—you know what's feasible and what's not.

#### SE: Kristin, as the more recent fellow, what was it like attending editor meetings? Was it intimidating to be thrown into that group? How were you able to contribute?

**Walter:** My experience was a bit unusual because the AMA building was closed due to the pandemic, so I was completely remote for my whole fellowship. But everyone was very welcoming. I had just finished working in an ICU, so I had a lot of experience with COVID-19 during the first three and a half months of the pandemic. And there were opportunities to express my opinion about specific papers or concepts, especially about COVID or pulmonary and critical care topics.

**Muth:** Kristin was critically important. Most of the other editors were not actively seeing or treating patients with COVID, so it was really useful, especially at the beginning of all that, to have her insights. The timing was a coincidence we offered her the job in February, before we knew COVID was in the United States, and by the time she started in July, she had gained vital experience with the disease.

#### SE: Science Editor published an article about Fishbein Fellowships in 2013,<sup>2</sup> which mentioned that fellows may participate in podcast and video interviews. This offers an opportunity to meet and interview those at the forefront of contemporary medicine. Kristin, did you have an experience like that?

Walter: I did have the chance to do several podcast interviews. In May 2021, I interviewed Dr Aluko Hope, who was involved in starting a long-COVID clinic at Montefiore [in collaboration with the Albert Einstein College of Medicine]. When it first opened, they were geared up for people leaving the ICU who were still critically ill and needed continued care. Yet they were seeing patients who had never even shown up at the hospital, who were presenting with these long-COVID symptoms. They realized that the people they'd set the clinic up for were not the ones coming in—patients with disabling symptoms, months after having a relatively mild COVID infection.

In June the same year, I interviewed Dr Ankit Bharat, a transplant surgeon at Northwestern University Medical Center. He did the first lung transplant in the United States on a patient with COVID-19. It was technically a very difficult surgery and different from the usual lung transplant patients, who typically present after years of COPD (chronic obstructive pulmonary disease) or other chronic lung disease. This was a 25-yr-old patient with acute respiratory failure—a totally different paradigm. Dr Bharat ultimately did 30 lung transplants for patients with COVID-19 acute respiratory distress syndrome (ARDS), and his paper was published by JAMA this year.

### SE: Speaking of being on the cutting edge, Chris, is there a new technology or process that you are watching closely?

**Muth:** There's a trend toward getting as much information to the audience in the format that is most desirable and easily consumed, so we're continuing to move into audio and video. Busy clinicians want to know the essence of the article in as distilled a way as possible. As editors, we're making sure each of those distilled pieces is still faithful to the research article. You have to strike a balance between having enough information so that the full message of the study can be understood in the proper context, but not having something so long that people lose attention.

SE: The article mentioned earlier quotes Robert M Golub, MD—at the time, Deputy Editor of JAMA and Fishbein Fellowship program director—as saying that "the role of a medical journal editor is critically important to preserving the quality of science." Can you describe how that plays out in practice?

**Muth:** Most of the research we receive is high quality and done with integrity. Part of the journal's role is to make sure that shines through for the reader by including all the necessary methodological and other details. That way, there is enough transparency for readers to see whether the design and methods are appropriate to answering the research question, and that the interpretations of the findings both follow from the methods used and account for any limitations. In short, the article that is published must be a faithful summary of the study as it was designed and executed. By doing that, we are preserving the integrity of the science.

#### SE: Finally, we've discussed benefits to the fellows and the larger medical field. For our readers who work for journals that may be considering something similar, what are the benefits to JAMA of offering the Fishbein Fellowship program?

**Muth:** By offering this fellowship, once a year we get a new voice in *JAMA*, a new viewpoint. For example, the fellow might be trained in a specialty that none of the editors are trained in. And they are usually at a more junior position in their career, which means we can get their perspective on how we are presenting the medical literature and how they are accessing it.

But part of my job is making sure it's a good educational experience for the fellow—that there's a good balance between working and learning. After all, the main goal is to train good editors, whether they work at *JAMA* or somewhere else. That's a benefit to science at large and scientific discourse and dialogue.

**Walter:** And, over the years, a number of Fishbein Fellows have stayed on at *JAMA*!

(Continued on p. 135)

## Frontiers for Young Minds: Communicating Passion and Excitement About Science

#### Janaynne Carvalho do Amaral and Jonathan Schultz

There is a growing recognition within the scientific community that to do the most good, science needs to be accessible to everyone, from politicians and voters, to doctors and patients, and the general public. To facilitate this access as early as possible, the journal *Frontiers for Young Minds* (FYM) (https://kids.frontiersin.org/) has taken the innovative approach of involving kids and teenagers, as young as 8 yr old, in the peer-review process as reviewers. Scientists submit articles presenting their research in an easily understood, accessible format, and kids, aged 8 to 15, provide in-depth reviews with point-by-point feedback on how authors can improve their articles. The process helps demystify the scientific process for kids while making scientists into better communicators.

Earlier this year, *Science Editor* spoke with FYM Chief Editors, Dr Robert Knight, a professor at UC Berkeley in Psychology and Neuroscience, and Dr Idan Segev, a professor at the Hebrew University in brain research, along with Will Savage, Journal Manager, and Laura Henderson, head of Program for Public Outreach, to discuss how FYM involves kids in the peer-review process, why this benefits everyone involved, and the importance of knowing your audience.

Science Editor (SE): How did the idea of Frontiers for Young Minds come about?

**Robert Knight:** I was in a boring meeting at a Society for Neuroscience conference, where they had people from different fields of neuroscience, and they were trying to find out where

JANAYNNE CARVALHO DO AMARAL is with School of Information Sciences at the University of Illinois Urbana-Champaign. JONATHAN SCHULTZ is Editor-in-Chief, Science Editor, and Director, Journal Operations, American Heart Association.

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the field was going. By about 10 or 11 in the morning, I thought there's got to be a better way to do that. And I said, why don't we get kids involved? The rest developed from there.

**Idan Segev:** You then came to Israel some 10 years ago and told me about your idea that kids will be the reviewers for the journal, and that these kids should be able to understand what the scientist is saying, and they should be the reviewers. I thought it was an absolutely innovative idea.

**Knight:** And you've been unbelievable. The origin was basically that: to put kids in charge of the review process with the idea that they could do just as good a job as adults with the right guidance. We would also help them understand what science is; to learn about a hypothesis and a design to test your hypothesis; how to collect data, how to analyze it, and how to write it up. In fact, for the journal, we have kids work with their mentors who are PhD holders or experienced researchers; that's exactly the flow we want the kids to understand. I will say this just to be clear: This is not a dumbed down journal. The final product from the kids is well-written, clear science, readable by other kids between the ages of 8 and 15 and any adult.

**Segev:** I've learned a lot myself from these kids' articles because there are many fields, such as physics, where I'm not an expert, so the first place I go if I want to learn about something, such as relativity, is the journal.

### SE: Why do you think it's important to engage kids and teens in the peer-review process?

**Knight:** At least in the United States, kids have STEM (science, technology, engineering, and math) education, but it's formalized and they get one or two hours a week. The things that get them more excited, like projects and science clubs and such, really don't begin until late middle school or even high school. I think it's important when kids are 8 to 12 yr old to expose them to the beauty of science. It gets them started earlier. We would like this journal to be taken as an important part of STEM education in schools.

**Segev:** In my experience, kids are a little bit afraid of scientists. They think that they sit somewhere in this ivory tower, and they are unique and unapproachable. The fact that the kids can give us feedback through the journal, and that researchers listen to them and change what they wrote is important. In my case, I was rejected twice by an 11 yr old girl. She taught me how to write in many ways, especially for kids.

I think it's extremely important. If I was a kid and a scientist could be a Nobel laureate or very important scientist, who interacts with me, believes in me, and appreciates me, that's an absolutely amazing message. These kids could be inspired to become scientists at some point, and they will not be afraid of these grownups who seem to know everything.

**Knight:** I completely agree. One of the most rewarding things about the journal is that it's a win for everybody. The kids like to be the reviewers, they like to know their voices are being heard, and that they're learning something. [The mentors] really, really enjoy it. And the authors actually find it's not trivial to make something complex really rigorous, but understandable. So it's a win across the board.

Will Savage: I think one of the real benefits of getting the kids involved is the process of critical thinking and providing feedback, which is not natural to 10 yr old. But you'd be surprised at how little encouragement they need. It really doesn't take a lot, just a little bit, of encouragement, and they open up and provide pretty honest, quite funny, feedback to the authors. If something really is quite dull and boring, the kids will say so. Kids are the ones constantly getting feedback almost until university, and the idea that a kid has an opportunity to do it the other way around is so rare. We are providing that platform, and that's really a key part of it from my perspective.

**Knight:** They're in charge—and I'm glad you brought that up. I have a collection of some of my favorite reviews from when the journal started. One of them was from an 11 yr old, and to paraphrase it, it says this paper's so boring I couldn't get through the first paragraph. If the authors think

their work is exciting, they ought to write like it is exciting. Something like that you'd never see from an adult reviewer. Once you get them confident that they can speak their mind, as they say, kids say the darndest things. And they're usually spot on in terms of the science.

#### SE: You've said a common criticism from the kids is that articles are hard to read or boring. What is some other common feedback from the kid reviewers?

**Segev:** In my experience, I'm doing brain modeling, so I'm using mathematical approaches and equations to model brain processes and trying to develop artificial intelligence inspired by the brain, things like that. I wrote a paper on that topic and the kid, this 11 yr old kid who I don't know in person, I'm not allowed to know. She said, "First of all, why do you need to model something that already exists? You did not explain to me, why do you need to model the brain? Because there is already a biological brain, what is the purpose of the model? This is very fundamental and not an easy issue to discuss, even with grownups. Why do you need to model something that exists? What do you learn from the model? She said, until you explain it to me, I won't accept your paper."

The other thing she said was "What does it mean to model a phenomenon? Can you give me an example of some phenomena that you model and show me, how do you go from the phenomena? Let's say some electrical activity in the brain. How do you model that; how do you know that the model is close to the biology? Give me an example." These were two very deep questions. Scientists take it for granted that you need to model the world to understand it.

She was right. I never explained, why do I need to model something? It's clear to me that I need to model, but this was the first time that she forced me to explain that. I guess this is one of the reasons that the paper is so highly read because it helped people understand why you need to model a phenomenon. If you want to understand it, you cannot just describe it.

**Knight:** The authors take the kids' input seriously. The other common feedback is the figures are really important. The kids often think the figures are not clear enough and there's often questions about clarity and redoing figures. We also have a glossary of how to pronounce terms at the bottom of the paper.

### SE: How do the kids become affiliated with the journal?

**Savage:** It's an indirect process. We have a huge editorial board of science mentors we recruit who have experience in peer review of some kind, or a fairly extensive publication record, so they're familiar at least with the process of peer review, and we rely on our board of these editorial mentors

#### INTERVIEW

#### CONTINUED

to recruit kids. It can be from a variety of different sources; sometimes it's family members. Often, mentors also pair up with teachers from local schools and in science classes. They'll do a review in the classroom and recruit the kids directly.

#### SE: What challenges do authors face trying to write articles for kids and then address the reviewer concerns? What feedback do you get from the authors?

**Savage:** I think Bob mentioned it before: It's usually the figures. Most figures in science are usually quite functional things, generally graphs or tables. Those don't really work for a kid, and if you really want to excite kids about science, graphs and tables just aren't going to cut it. We try to help scientists relate certain aspects and content to real life situations to help kids to be able to visualize it. For example, the "eureka" moment: the water coming up when you take a bath—that kind of style can really help. A Q&A style can help too—getting the kids to formulate and pose peripheral questions in their minds as they're reading is an important way of doing it. If it's not figures, then usually it's choice of language and style, and we have some tips that we send out to authors to help with this.

Knight: Idan and I have been super-fortunate to have this incredible team at Frontiers running this journal. Will and Laura have been great at expanding the journal and making sure the product is really clear. And again, the kids and the authors all get feedback. If there's a first read by the editorial office and it was not ready, we send it back and say redo it.

**Savage:** We do a lot of pre-review work, and we work with the authors quite substantially, even before the review starts. You'd be surprised how often we get manuscripts that come in at 8000–10,000 words, and authors have to get that down to a maximum of 1500 words. That can be a long process, but the authors learn a huge amount, not just in terms of how they communicate their work. You're telling someone who's been buried in their research 24/7 for years, "Now you need to write this for a nine-year-old." It's tough.

SE: How do you think the lessons learned from Frontiers for Young Minds about communicating passion

### and excitement about science can be applied to scientific journals in general?

Laura Henderson: Excellent question. From my side, I would say that the one thing that *Frontiers for Young Minds* does incredibly well is understanding its audience, and because we directly engage with that audience, we know what their issues are. We know what they want, and we know whether our journal is really speaking to them or not. I would say that too often academic journals simply put content out there and assume that this is what is wanted. I think that the more in touch you can be with your audience the better. That is why the unique involvement in the peer review of *Frontiers for Young Minds* is what sets us apart.

**Savage:** I worked with *Frontiers in Physiology* before I came into *Frontiers for Young Minds*, so I had direct involvement with a core academic journal. The big lesson for me is it's not just about publishing the paper; the most impactful work that we do is post-publication. I think that's where a lot of journals could do a lot better. There is a very good reason why, for example, our per-article views at *Frontiers for Young Minds* is the highest by a long stretch across Frontiers: it's because we put in the effort post-publication.

If journals focus on citation impact, you're only going to get so far with a big Impact Factor because it's only of interest within the academic world. If you really want to get your science out there, you've got to do more. We try not to focus on citations and instead on the audience as a longterm goal. How many editors truly know their audience and what they want and how to reach them? We know exactly who we want to read it, and that's part of the reason why I think that it is successful.

**Knight:** You could tell your science editors that maybe when they're looking at their papers, if they see things that they are publishing in their fine journals that would be appealing intellectually and exciting to kids that maybe they ought to be encouraging their top authors to submit articles to *Frontiers for Young Minds*.

## CSE's Diversity, Equity, and Inclusion (DEI) Committee:

Celebrating Our First Year of Growth, Successes, and Future Direction

#### Leonard Jack, Jr, Otito Frances Iwuchukwu, Peter J Olson, Amy Ritchie Johnson, Patricia K Baskin, Mary K Billingsley, and Jennifer Lynn Deyton

Scholarly publishing organization leaders, journal editor and editorial teams, and authors recognize that advancing diversity, equity, and inclusion (DEI) best practices helps to enhance diversity across a variety of areas, including but not limited to, disciplinary, racial and ethnic, and linguistic and cultural diversity, and to promote the value and benefits gained from diversity of opinion, thought, and perspective.<sup>1,2</sup> Recently, there have been important and long-needed discussions regarding why, how, and where principles of DEI should be integrated into scholarly publishing.<sup>1</sup> In September 2021, the Council of Science Editors (CSE) Board of Directors (BOD) approved the formation of the CSE DEI Committee out of the existing DEI Task Force, formed the year before. The original task force, and later the committee, grew from the BOD's commitment to establishing CSE as a leader in the field of scholarly publishing on integrating timely, effective,

LEONARD JACK, JR, PHD, MSc (ORCID: 0000-0002-4342-5696), Co-Chair, Diversity, Equity, and Inclusion Committee, CSE, and Editor in Chief, Preventing Chronic Disease: Public Health Research, Practice, and Policy, Office of Medicine and Science, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. The findings and conclusions in this report are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention. OTITO FRANCES IWUCHUKWU, RPh, PhD, MA, FCP, Co-Chair, Diversity, Equity, and Inclusion Committee, CSE, and Associate Professor Pharmaceutical Sciences, Fairleigh Dickinson University School of Pharmacy and Health Sciences. PETER J OLSON, ELS, Freelance Manuscript Editing Coordinator, JAMA Network. AMY RITCHIE JOHNSON, BA (she/ they) (ORCID: 0000-0003-1339-0389) Manuscript Editor, Radiology, Radiological Society of North America. PATRICIA K BASKIN, MS, Past President, Council of Science Editors; Executive Editor, Neurology® Journals. MARY K BILLINGSLEY, ELS (she/her) (ORCID: 0000-0002-5785-5769), Past President, Council of Science Editors; Managing Editor/Journal Department Director, American Academy of Child and Adolescent Psychiatry. JENNIFER LYNN DEYTON (she/her), President, Council of Science Editors; Senior Director and General Manager, J&J Editorial, Wiley Partner Solutions.

and responsive DEI principles in organizational culture and operations, as well as in educational opportunities for members.

The purpose of the CSE DEI Committee is to support the organization in building capacity among its leadership, members, and the profession at large to deliver programmatic activities and training that integrate DEI best practices in science editing, publication management, scholarly publishing and communication, member recruitment, participation, and engagement. Since the BOD's approval of the DEI Committee, the priority has been to recruit active members. The committee currently consists of nearly 20 members working in various capacities among organizations and journals in scholarly publishing. The committee spent time early on deciding where to focus its efforts to maximize participation and identify areas that would provide CSE members with resources, educational experiences, and opportunities to contribute feedback on the committee's direction. Meeting once a month, the committee has worked diligently to position CSE as an international resource on DEI best practices. DEI Committee members have worked to integrate principles of DEI throughout CSE's programs, services, and operations. This article provides highlights of activities undertaken by the committee since its inception and discusses future activities planned for 2023.

The CSE DEI Committee has made great strides in its first year and is pleased to share the progress achieved so far in 9 key areas:

### 1. Coalition for Diversity & Inclusion in Scholarly Communications (C4DISC)

A source of support and tools for CSE's DEI committee is the Coalition for Diversity and Inclusion in Scholarly Communications (C4DISC).<sup>3</sup> The goal of C4DISC is to work with organizations and individuals to build equity, inclusion, diversity, and accessibility in scholarly communications.<sup>3</sup> CSE was one of the 10 cofounding organizations of C4DISC when it was formed in June of 2017. Within the past few years, C4DISC has published a statement of principles and several toolkits to help guide the scholarly publishing

world in addressing DEI issues, along with reaching out to establish partner organizations and sponsoring webinars and educational events. A major effort has been made in developing training materials for use in transforming our organizational cultures and workplaces. The Toolkits hosted on the C4DISC site include the Antiracism Toolkit for Allies<sup>4</sup>; the Antiracism Toolkit for Organizations<sup>5</sup>; the Antiracism Toolkit for Black, Indigenous, and People of Color<sup>6</sup>; and most recently, the Guidelines on Inclusive Language and Images in Scholarly Communication.<sup>7</sup> These resources are intended to be used not only by the leadership of C4DISC member organizations and partnership organizations, but also by members of these organizations who can apply their use in various work settings around the world.

#### 2. New Content in CSE's "Recommendations for Promoting Integrity in Scientific Journal Publications (formerly the CSE's White Paper on Promoting Integrity in Scientific Journal Publications)" on DEI Best Practices in Scholarly Publishing

CSE and its Editorial Policy Committee encourage organizations, journals, and individuals in scholarly publishing to take responsibility for promoting integrity in scholarly publishing. CSE's "Recommendation for Promoting Integrity in Scientific Journal Publication" offers guidance on ethical ways to do this, ranging from roles and responsibilities in publishing to authorship and author responsibilities to reviewer roles and responsibilities to research misconduct. New content regarding DEI best practices in scholarly publishing was approved by the BOD. The new section, "Diversity, Equity, and Inclusion in Scholarly Publishing," identifies 7 ways to integrate DEI best practices and policies in scientific publishing.<sup>2,8</sup> These include:

- Establishing accountability
- Developing guidelines for publishing content on diverse racial and ethnic groups
- Publishing intentional statements to promote DEI
- Ensuring fair representation among editorial boards, peer reviewers, and journal staff
- Ensuring inclusive language in journal publications
- Collecting demographic data
- Acknowledging progress and missteps

### 3. CSE Diversity, Equity, and Inclusion Scholarly Resources Webpage

In 2020, CSE recognized the need to establish a repository for journals, publishers, and trade and professional

associations to share published DEI-related position statements, commitment statements, action plans, frameworks, and polices. CSE established its DEI Scholarly Resources webpage, and over this past year the CSE DEI Committee has regularly updated this webpage to include the latest resources available.<sup>9</sup> It now includes content in 6 categories:

- DEI Committees of Trade and Professional Organizations in Scholarly Publishing
- DEI and Peer Review
- DEI Statements and Policies from Journals, Trade and Professional Associations, and Publishers
- Bias, Discrimination, and Racism
- Data Collection on Diversity, Equity, and Inclusion
- Reporting Sex, Gender, and Race in Publications
- Inclusive Language Communication

The resources available in these categories can assist journals at various stages of implementation of DEIcentered activities. As with any field of interest, new insights are constantly being generated within and across these categories. Thus, the DEI Committee has envisioned a process to curate and maintain the page over time, and visitors are encouraged to explore how the content evolves and to consider submitting resources for inclusion as they become available.

### 4. DEI Sensitivity Review of *Scientific Style and Format,* 9th Edition

Language that imparts bias toward or against persons or groups based on characteristics or demographics must be avoided. Efforts are currently underway to update *Scientific Style and Format*, the CSE style manual, and members of the DEI Committee were asked to provide a language sensitivity review of the forthcoming 9th edition. This review was conducted to provide culturally diverse perspectives about the language commonly used in scholarly publishing and, where necessary, offer guidance to users on ways to avoid the harmful effects of dominant narratives, words, terms, and the like. The 9th Edition of *Scientific Style and Format* is scheduled for release in 2023.

#### 5. 2022 CSE Annual Meeting Panel: Approaches to Advancing Diversity, Equity, and Inclusion in Journal Publishing

The CSE DEI committee coordinated and led a panel of 4 journal editors-in-chief (EICs) to discuss the rationale for establishing and sustaining the expansion of diversity, equitable decision-making, and a culture of inclusion not only in scholarly communications but also among journal publishing professionals.<sup>10</sup> The EICs of *Preventing Chronic* 

Disease: Public Health Research, Practice & Policy; American Family Physician; Health Education & Behavior; and the American Journal of Public Health participated in the panel. The EICs discussed the importance of disseminating statements committed to creating diverse representation on editorial boards and among peer reviewers and journal staff. Panel members also talked about the benefits of identifying a DEI editor or consultant to review institutionalized processes and systems and ensure accountability in dayto-day journal operations. The discussion emphasized the importance of embracing publication content that focuses less on risk factors and more on non-individual determinants of health, including infrequently discussed topics such as racism and intentional and unintentional societal biases. The panel strongly encouraged organizations and journals to reach out to one another and share lessons learnedboth successes and failures.

#### 6. Diversity, Equity, and Inclusion Checklist

To address the need for increased diversity, inclusivity, and accessibility across CSE programming, a DEI Checklist is being developed in collaboration with the DEI Committee and CSE leadership. The checklist is organized into 4 parts to address multiple aspects of event programming: 1) participants (event designers, speakers, and attendees), 2) content of the event and any enduring materials, 3) marketing, and 4) dissemination. The latter part refers to disseminating the ideas of participants from underrepresented groups generated during CSE events, which is an important step to deflecting misappropriation of those ideas by dominant groups in the field of scholarly publishing. The checklist includes an invitation letter template to be used when recruiting panelists and moderators, designed with inclusive and respectful wording. In addition, a DEI-focused rubric has been put in place that has an evolving purpose. To start, it is intended to hold event planners accountable to DEI principles, eventually allowing CSE leadership to track and assess the DEI of programming over time. Ultimately, the finalized checklist will be made available on the DEI Committee's publicly available webpage to share this work broadly across disciplines.

#### 7. 2022 CSE Fall DEI Symposium

At the 2022 CSE Fall Symposium, members of the DEI Committee and representatives from the BOD will participate in a joint session to discuss CSE's DEI-related objectives and activities, particularly as they pertain to CSE's Strategic Plan. The overarching purpose of this session will be to continue ongoing conversations between CSE leadership and the DEI Committee in a transparent forum with members and attendees. Panelists from the BOD and the committee will discuss (among other things) the challenges faced by CSE leadership in implementing policies related to DEI, how the DEI Committee might help address those challenges, and how CSE leadership and the BOD can in turn support the efforts of the DEI Committee. An additional hope for the session is that it will inspire and encourage CSE members to become invested in DEI-related endeavors at every level—not only within CSE but also within other scholarly publishing organizations and the societies of which they are members. DEI work is not limited to boards, committees, and leadership teams—it is critical at every level.

### 8. Diversity, Equity, and Inclusion Column in *Science Editor*

The DEI Committee believes that finding ways to provide CSE members with timely updates on the committee's progress, innovations in the field, training opportunities, and ways to become and remain involved are critical. One way to achieve these objectives is to use the newly created DEI column in Science Editor to feature articles addressing a range of DEI-related topics. The first article appearing in the column, "Diversity, Equity, and Inclusion (DEI) Task Force Update and Future Direction," provided CSE members with updates on programs being offered to increase awareness of DEI initiatives, insights learned regarding DEI-related knowledge gaps among CSE members, identification of ways to engage new members who have not traditionally seen membership in CSE as inclusive, and steps taken to launch CSE's DEI Committee.<sup>11</sup> The DEI Committee is now contributing this second article to the column to highlight its progress, achievements, and future activities. Beginning in 2023, CSE members can anticipate regular publication of articles for this column. While some articles appearing in this column will be generated by DEI Committee members, all CSE members are strongly encouraged to submit DEIrelated articles to Science Editor for consideration.

#### 9. CSE Awards and Honors Committee

CSE awards are given annually to recognize leaders in the field of science communication and to acknowledge the exceptional accomplishments and contributions of CSE members. A member of the DEI Committee assisted the Awards and Honors Committee in identifying individuals and/ or organizations submitted to the BOD for consideration. The Awards and Honors Committee recommends recipients along with a rationale for selection to the BOD in accordance with criteria identified for each award type. The BOD makes the final decision on recipients selected to receive CSE awards. Representation from the DEI Committee is important given the need to ensure the tenets of DEI best practices are employed when identifying, selecting, and recognizing individuals, groups, and organizations advancing work in the field of scholarly publishing.

#### Conclusion

The DEI Committee has accomplished much during its first year, building on the successful efforts of the original task force, and is well positioned to continue to advance DEI efforts for our field. CSE members can anticipate the following DEI Committee activities in 2023:

- Growing collection of curated content on the DEI Scholarly Resources webpage
- Articles in the new DEI column in Science Editor
- DEI-focused educational opportunities, including a webinar on collecting and protecting demographic data
- Resources to educate facilitators on effective DEI training
- Collection of demographic data from CSE members and contributors to CSE events and programming
- Efforts to establish, monitor, and assess benchmark DEI-related goals and objectives

There is exciting work ahead for the CSE DEI Committee. As such, the committee members realize they cannot do this important work alone. The DEI Committee encourages CSE members to share their thoughts and suggestions on areas around which the committee can best meet the needs of the organization and community. The work of the DEI Committee is in line with CSE's commitment to equal opportunity and treatment for all regardless of race, ethnicity, sex, gender identity and expression, sexual orientation, disability, religion, age, appearance, or political affiliation, as well as its commitment to maintaining an environment free of harassment, discrimination, and hostility.<sup>12</sup> The DEI Committee is proud of the work accomplished to date and looks forward to future growth and successes. According to CSE's President, Jennifer Deyton, "CSE Leadership is committed to advancing the work of the DEI Committee. We have included a DEI goal in our strategic plan: Advance CSE's commitment to diversity, equity, and inclusion within the Council, its business activities, and across its programs with the very clear objective to define what diversity, equity, and inclusion means to CSE and embed process, strategy, and opportunity to support this in 100% of

the organization's operations by 2025. Further, as is exemplified by the list of great work in this article, we have woven the intent of this goal throughout our other strategic plan goals in an effort to support the great work of the DEI Committee fully in all our offerings, membership efforts, programming and strategic planning."

#### Acknowledgment

Special thanks to members of the DEI Committee for their support of the activities captured in this article and DEI activities currently underway.

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## Meet Social Media Sensation Kimberlyn Stuart

#### Jennifer Regala

Enough about Jennifer Regala's boring thoughts about social media and scholarly publishing. I've been watching the @CScienceEditors Twitter handle recently, and I was thinking "DANG. Who's in charge of this account now?" Turns out it's the uber-talented Kimberlyn Stuart, Editorial Associate at the American Society of Nephrology (ASN). (Side note: Kimberlyn says we can call her Kim, but please don't call me Jen. Jenny is fine. Always ask. Never assume.) Kim is even more brilliant in person than the social media presence she is creating on behalf of all of us via the official Twitter handle of CSE.

I had the chance to meet and interview Kim via Zoom and talk to her about her amazing work. Join me to learn more about her perspective on her work at ASN, how she approaches her CSE volunteer work, and her thoughts on the future of social media and scholarly publishing. (Another side note: Jennifer Regala is as awkward as you might have guessed in an interview situation. Love me through it. I did not edit this interview to salvage my dignity. Enjoy.) Many thanks to Shari Leventhal, CSE President-elect, and Kim's ASN colleague, for introducing me to this social media star.

Jennifer Regala: Thank you for meeting with me to talk all things social media. My questions are not too scandalous, so we should be okay. The reason I wanted to talk to you was because I was talking with Shari about you, and I was just like, "Wow, she's awesome." The social media just looks so good for Council of Science Editors, and I've really appreciated that. So that's what prompted me wanting to meet you in person and then to see if you'd be willing for me to interview you. Can you tell me about yourself?

**Kimberlyn Stuart:** I'm Kim Stuart. I'm an editorial associate for the American Society of Nephrology, and in that role I manage social media for the *Clinical Journal of American Society of Nephrology*, the *Journal of American* 



Society of Nephrology, and Kidney360, which is our online Open Access journal. I've really gotten to grow in my experience with social media. This is my first job out of college, but I had a little bit of experience in college with social media because I was a managing editor for the undergraduate research journal at my college [at James Madison University in Virginia] so I got to play around with it there too.

Jennifer: In your current role, I imagine that it's evolving, always probably quickly. What is your approach? How are you keeping up with those accounts, and what's your approach to handling them? I would assume that you have a measure of scheduling out certain content probably, but then there's also the organic things that happen where an author pops up maybe with something great or with a complaint? How do you approach handling these very diverse and important accounts?

**Kim:** I think the most important thing for me is consistency. I try to post twice a day, at least for each of the journals, and then promote articles each time I post. For the journals, the hardest part about writing a tweet for a medical article is condensing it down without changing the content. I tend to look just at the abstract because that's already the condensed version of the article. And then I take bits from that. Occasionally, there will be authors that are like, "Oh, it's not exactly how I wanted it to sound," so then I'll take the post down and then re-upload it. Or if they say, "Actually I wanted you to focus more on this aspect of the research," I'll

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

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change it to meet their needs. If something like that comes up, I'll try to do it right away just so the authors are happy, and they're more likely to share it when they're happy. And then that way the tweet will reach a larger audience in total.

**Jennifer:** Within your peer-review system, are you all collecting any important information from the authors at any stage? For instance, suggested tweets, Twitter handles, anything like that?

**Kim:** When the manuscripts are accepted, we send out an email to authors asking them to send me their Twitter handles or anything they'd like to use in the promotion of their article. And then we'll add that into our system so we have it for future reference if we want to tweet about the article. Again, the authors don't provide a suggested text, but for the *Journal of the American Society of Nephrology*, we have a science writer who will write a little blurb of text for articles.

**Jennifer:** Do you create images or do you use images that the authors have provided as figures or what's your approach on using anything visual? Do you do any kind of visual abstracts?

**Kim:** We tend to have visual abstracts for each article, so those are what I mainly use. If they don't have visual abstracts, like research letters, they normally will include figures, and I'll use those. But if the authors don't have figures, I normally don't put in a figure because I don't want to risk using something that the author doesn't approve of. If it's not an article and just something we're promoting, I'll try to find a copyright-free image and use that because normally posts do better if you have an image attached to them.

**Jennifer:** What's your strategy about timing of posts? It sounds like you have a very regimented schedule.

**Kim:** With Twitter analytics, we were able to see what time most of our posts were interacted with the most. Right now for us, our followers are mostly active between like 10 and 11 in the morning and then after noon and before 5. I'm assuming based on that, that they're scrolling, like when they have a free moment during their workday. And right now I'm experimenting a little bit more with readers in different time zones. I want to see if we can include them as well. I've been scheduling some posts to go later in the day and seeing how they compare. I think it's important to keep track of how much engagement you're getting with the time that you're posting.

**Jennifer:** I love the analytics approach to it. How are you supported in this important role? How are you supported by a larger social media team internally at ASN? And then also

do you have editorial input? I'll give you an example. At the American Urological Association where I work, we have a team of online content editors who are providing us strategy input. Does anything like that exist at ASN?

**Kim:** Right now, the main ASN account is run by our communications team. If I have a post that needs to reach a wider audience, I'll reach out to them, and they'll share it on their platform. As far as the content for the journals goes, I'm mainly the one who handles that. Like I said, we have a science editor for the *Journal of the American Society of Nephrology*, and they'll write text and I'll use that for those. But the other two journals don't have that, so I'm the one who's mainly making that content. For data analytics, I have a teammate, Susan Willner, who is amazing with data, and she goes in and tells me what's working and what's not working based on data. And then she gives me suggestions for how to improve.

**Jennifer:** We've talked a lot about Twitter. Do any other social media platforms play into this professional approach for the journals? Facebook, LinkedIn, TikTok, Instagram? Are you using any other platforms?

**Kim:** Not for the journals, but for CSE, we are using LinkedIn and Facebook as well. I think you just really have to think about your audience. For the journals, I really think Twitter's the best way to go because of how many articles are being posted at such a rapid pace. Twitter is designed to have several posts every single day. But I think if you did that on Facebook or Instagram, it might overwhelm people. I think for journals, with the amount of articles you have, it's really important to consider which source would be the best for you to post on.

**Jennifer:** Another question back into the analytics territory. Of course, you know, journal impact factor is the unfortunate metric that we all live and die by, but how much are you looking at Altmetrics data, if at all? Are you reporting out on those data internally and/or externally and paying attention to how much traction your articles are getting through more nontraditional sorts of analysis?

**Kim:** Yes. Internally we're using Altmetrics. We do quarterly reports to see which articles are getting the most traction and then where from, and that's another great way for me to check how we're growing on social media to see what outside sources are bringing in eyes on papers.

**Jennifer:** That makes me think of another question: How do you try to get new followers?

**Kim:** Right now, I like natural engagement because our newest Twitter account is for our Open Access journal. It's at about 7,000 right now. And our other two journals are

close to 20,000. I'm trying to grow that but also keep an audience that's genuine and wants to interact with our content. I'm not going to follow anybody that Twitter suggests because I want them to have an interest in what we're posting. I found the best way to do that is to look at similar pages to yours and then follow people who you think would also be interested in your content. The tool we're using right now is called followerwonk, and we're able to compare different Twitter accounts to ours and then see which followers overlap and which followers don't. And then I'll go through and look at Twitter's users who are interested in nephrology or have a medical background and then follow them as well.

**Jennifer:** I love that. That organic approach is the secret to success. What percent of your day is spent handling social media?

**Kim:** I'd say probably 40% is social media right now because most of what I do in the day is helping managing editors and authors of the three journals with their day-to-day tasks. When I'm not doing that, I am focusing entirely on social media.

**Jennifer:** I love to hear this. It's so important to have that commitment and that dedicated person like you to promote research. Do you use social media at all in a professional sense to promote yourself? Or to form a professional community for yourself?

**Kim:** I think in college I did more when I was searching for a job, but now that I have one, I have what I like to call social media anxiety. I don't like to post as myself very often, but I don't have that issue when I'm posting for one of the journals. I used to use LinkedIn, but now that I have a job, I don't tend to as much.

Jennifer: I understand all of that. So all of this sounds so easy, but I know for a fact that none of it is easy. An outsider to social media or someone who just doesn't do that job day today thinks, "Oh, how hard is it to put together some tweets and get some followers?" But trust me when I say I know it's really, really challenging. I think that is a stumbling point for a lot of people, especially in scholarly publishing and especially folks who have been doing this kind of work for a long time. This is a new turn that things are taking, and it's super important to have this social media engagement to keep research alive. What would be your best advice to someone who's just starting out using social media for professional purposes or on behalf of their organization and particularly on behalf of their publishing program or separate journals? What are things that must be done, and what are things that should be avoided at all costs?

Kim: I think the most important thing is to keep your audience in mind. I know when I got hired, and I learned that my job was going to be social media, I was a little nervous because in college I had a job with social media as well and that audience was completely different than the medical profession. In college, it was all college students, so I had to be up to date on trends, especially with people who are constantly on the Internet. It was just keeping in mind that my audience is online all the time, so I have to also be online all the time. With journals, I think it's a little easier because your audience knows what they're looking for already, and they're not really going to spend more time than they need online or to look up things. My advice is to know who your audience is and speak to them directly. If you try to address everybody on social media, you're not going to find as much success.

**Jennifer:** A follow-up question to knowing your audience. How have you developed the voice of these platforms? I follow ASN's accounts, and they're really well done. That's easier said than done. What is your advice for having that voice that is very professional yet still engaging?

**Kim:** I think if your journal already has an established brand, it's probably going to have a voice whether or not it's intentional. I try to use language similar to what's already either within the manuscripts or in the site itself for the journal. For JASN and CJASN, they're a lot more established and traditional. I try to be a lot more serious and straightforward. I try to be more informational than getting feedback from the audience because I think that's what that audience is looking for. For *Kidney360*, we're trying to be a little more experimental because it's new and online and Open Access. We think the viewers might be a little more feedback to try and create different engagement. I think going with what your journal has already set up is a great way to find your voice.

**Jennifer:** Do you do anything a little out of the ordinary ever? Emojis? Do you solicit video content or anything that's a little above and beyond?

**Kim:** I think when I'm not tweeting about articles, yes, because when I'm trying to promote general stuff, I feel like people like to see emojis. For tweetorials, we've started doing those for some of our *Kidney360* articles because I think they catch attention better. And then when you're reading a long thread, it's easier to have your eye drawn to important points if you're using emojis. We haven't really solicited video content, but I don't think it's out of the realm of possibility. It just has to be for the right scenario. Maybe for Peer Review Week, like getting personal testimonials

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from authors about the importance of peer review, I think that would be a great opportunity to use video testimonies.

**Jennifer:** What are your favorite scholarly publishing-related accounts to follow and why?

**Kim:** Well obviously CSE, and then I like to look at I think SSP (@ScholarlyPub on Twitter) as well. I think they have fun engagement. And then also *Environmental Health Perspectives* (@EHPOnline on Twitter) I think does a great job of promoting articles. Then J&J Editorial (@jjeditorial)—they always interact with us a lot on CSE.

Jennifer: Tell me more about your volunteer work with CSE. How did you get involved? And I have to say, like I said at the beginning, I've been following the CSE Twitter handle and I love the difference and escalation of the dissemination of information that has evolved under your leadership. Tell me more about how you got involved and what that looks like and what's your strategy to share content?

Kim: Shari Leventhal is my supervisor, and she recommended that I join the Marketing Committee to learn more about social media because they were looking for more members and had two people that were very experienced in social media. I joined earlier this year because I was awarded a partial scholarship with CSE. I had a discounted membership and was encouraged to join a committee, so I joined the marketing committee. I was given the opportunity to slowly take over the social media. Now I have control of the CSE accounts. I've been posting there, and I think my main goal is to be posting more often because before it was probably like every other day and now I'm trying to do every day just to see if we can boost our followers on any of the platforms with more consistent content. And then I think the biggest push for content has been promoting Science Editor articles more often. Darisa Clarke has been helping me by creating posts for the articles and then I schedule them and find images to use for them. That's been a real great help in promoting those articles and then having more consistent posts being able to be scheduled.

**Jennifer:** What do you want from all of us on committees, from the Board, etc.: What could all of us do to support you and your efforts of social media development for CSE?

**Kim:** I think the biggest thing would be to follow all the accounts and then share them in your personal and professional spheres so that they can reach a wider audience. Our biggest push is to grow follower accounts on all platforms and then that way we can naturally improve the interactions with our posts. Sharing posts and sharing events that are relevant to each of the professional committees would be a great way to support the Marketing Committee. **Jennifer:** What do you envision as the next big thing in scholarly publishing social media related or not social media related? I'm always curious what folks think is coming.

Kim: I think with the Office of Science and Technology Policy memo (https://www.whitehouse.gov/wp-content/ uploads/2022/08/08-2022-OSTP-Public-Access-Memo. pdf), Open Access is going to be the next big thing, and I think that's going to push a lot more authors to be online more than they might have been because their articles are going to be open to a wider audience. I think there's going to be a push towards video-related content with the popularity of TikTok, but I know TikTok can be intimidating for a lot of people, especially those who aren't as familiar with social media. It's intimidating to me, and I'm online every day. I think there is going to be a push for it, but I feel like it's going to start slow. Instagram added a "reels" function, Twitter's added something, there are more video-focused functions recently. And then there's also Twitter Spaces where you can directly communicate with your audience. I think there's going to be a push for more direct feedback, whether that be videos where you can read the comments immediately and then respond to those or a space where you can directly interact with your audience.

**Jennifer:** I completely, thoroughly agree with you. Moving back to ASN, when it's time for your annual meeting, how much connection will your journal social media presence have with your overall social media presence?

**Kim:** For our annual meeting in November, my current plan is to schedule posts for that whole week before I leave. Then we also have a session at our annual meeting that focuses on the best articles posted in each journal that year. I think we will highlight those more during the annual meeting and then maybe post clips from the presentations or highlights from that session.

**Jennifer:** Tell me what I didn't bring up today but you expected me to bring up that's important to this conversation?

**Kim:** I think you covered most of it. We talked briefly about how I think journal articles are best on Twitter or maybe even Facebook if you're posting less frequently. but if you're an image-based organization and have a lot of images, I think Instagram's a great way to share those because it's built around images. I think an issue a lot of organizations have is that they tend to put their eggs in every basket when they don't really need to. So if you're not an image-based organization, I wouldn't focus on Instagram at all. If you don't have someone who can dedicate time to creating videos, I wouldn't mess with TikTok yet because I think the biggest

issue is consistency for all platforms. I think it's best to focus on one or two sites that you think your content works with the best rather than trying each site and seeing what works.

Jennifer: Gotcha. That brings me to another question. Say you're out there and you're noticing that something is taking off again, like maybe it is time to start the TikTok or whatever the new platform might be. What's the best way to make that recommendation to your organization? Or maybe someone's not even doing Twitter yet, so how does somebody make that argument that this is important to the organization? **Kim:** I'd say finding people in your organization that would be best equipped to assist you in this new task. So if you are trying to launch a Twitter account, talking to either the communications department or someone who has a heavy Twitter presence in their personal life, I think that would be a great way to set the ball rolling and then understand what you're kind of looking for with launching a new social media platform.

Kim, thank you so much for your time. I learned so much from our conversation and from following your accounts on social media. Thank you for all that you do for our community.

#### (Continued from p. 121)

for engaging in public discussion. More recently, comments about journal articles have moved to social media platforms, such as Twitter, allowing for unscreened comments to be posted to a public audience.

The EPC hopes this guidance is a helpful addition to the recommendations paper. This new section had input from several members of the committee and includes links to other resources in the scholarly community. If you are interested in becoming involved with the recommendations paper, please consider joining the Editorial Policy Committee.

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#### (Continued from p. 123)

SE: What other directions have former fellows gone after their year in the Fishbein program?

**Muth:** The careers of former fellows run the gamut: Some move into full-time editing (at *JAMA* or elsewhere); some go back to clinical work; and others, like myself, continue to see patients and work as editors.

SE: Thank you both for your time today. Stay tuned for a future issue of Science Editor in which we hope to explore additional editing fellowships for physicians, scientists, trainees, and others. Journals and societies are gaining insights from fellows on what is relevant, interesting, and engaging to readers, while the participants benefit from the in-depth experience with the scholarly publishing process.

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## Current Guidance on Inclusive Language for Medical and Science Journals

MODERATOR: Stacy L Christiansen JAMA

SPEAKERS: Tracy Frey JAMA Network Stacy L Christiansen

REPORTER: Michele Springer Caudex New York, New York

Annette Flanagin JAMA and JAMA Network

"Inclusive language supports diversity and conveys respect. Language that imparts bias toward or against persons or groups based on characteristics or demographics must be avoided."<sup>1</sup> This session focused on inclusive language updates from the AMA Manual of Style, a resource used by scientific authors, editors, and publishers worldwide.

Stacy Christiansen opened the session by explaining the rationale behind updating the AMA Manual of Style so soon after the last update (February 2020): They believe it is imperative for medical and scientific journals to use consistent, equitable language when describing the race and ethnicity of patients or in articles that discuss health disparities in healthcare, research, and education (Figure).

The AMA Manual of Style Committee began reassessing the guidance for reporting race and ethnicity in spring of 2020. After 8 months of research, updates, and external review, the revised guidance was published as an editorial in the *Journal* of the American Medical Association (JAMA) in February 2021 with an invitation for wider review and feedback. The guidance was revised following comments from numerous reviewers and those with expertise in diversity, equity, and inclusion. After another round of peer review, the updated guidance was published in JAMA in August 2021.

The following key principles are included in the updated guidance:

 An acknowledgment that race and ethnicity are social constructs—race is a created concept, not defined by genetics or biological differences. These terms provide limited utility in understanding medical research practice and policy but may be useful in studying racism, disparities, and inequities in health, health policy, education, and research Why? "Terminology, usage, and word choice are critically important, especially when describing people and when discussing race and ethnicity. Inclusive language supports diversity and conveys respect. Language that imparts bias toward or against persons or groups based on characteristics or demographics must be avoided."

Figure. Rationale for updating AMA guidance

- It is paramount that writers and editors are clear, precise, fair, and consistent in the terms they use to describe race and ethnicity
- Race and ethnicity should be reported with other sociodemographic factors
- The origin of racial and ethnic categories should clearly indicate what categories were used and how study participants' race and ethnicity were determined, with preference for self-identification
- The guidance is not final—discussion will continue, and updates will be made as needed

A summary guide for appropriate reporting of race and ethnicity was presented and included the following preferences:

- Capitalize all race and ethnicity terms—this is the most fair, sensitive, and consistent approach
- The term "race/ethnicity" was changed to "race and ethnicity"—using a slash can be confusing, since race and ethnicity both have numerous subcategories
- List race and ethnicity categories in alphabetical order instead of by prevalence, but list "other" and "unknown" last
- Following patient-first language, race and ethnicity should be used as modifiers (e.g., Asian patients; White populations), not nouns (e.g., Asians; Whites)
- Compound racial and ethnic terms should not be hyphenated (e.g., Asian American; African American)
- Avoid "mixed race" unless this term was used in data collection; "multiracial" or "multiethnic" is preferred

Annette Flanagin spoke next and continued:

 Abbreviations (e.g., AANHPI [Asian American Native Hawaiian Pacific Islander]) should be avoided as they may not be understood by a global audience. If such abbreviations must be used, they should be expanded and reserved only for complicated tables

- "Minority" and "minorities" should not be used as nouns; rather, they should be used with another descriptor (e.g., racial and ethnic minority groups). "Underserved" or "underrepresented" can be used but have different meanings—"underserved" refers to health disparities among groups, while "underrepresented" refers to a disproportionately low number of individuals in a workforce or educational program
- "People of color" should be avoided—this is inclusive to the point that it erases differences between groups. The preference is to list specific racial or ethnic categories
- Terms such as "Black, Indigenous, and people of color (BIPOC)", "Black, Asian, and minority ethnic (BAME)", and "Black and minority ethnic (BME)" should be avoided as they disregard individuals' identities, may not include all groups, eliminate differences among groups, and may imply hierarchy. Preference is to list specific racial or ethnic categories
- If collective terms are used, ask for definitions of groups included and expand at first mention. In practice, JAMA Network journal manuscript editors will follow up with authors who use collective terms that are vague or nonspecific
- Avoid use of colors (e.g., brown and yellow) to describe individuals or groups. These terms may be less inclusive than intended, or considered pejorative or a slur
- Avoid "other" without explanation as it is vague. Authors should state which groups are included in the term "other" and why "other" was used (e.g., numbers in some categories were too small for meaningful comparative analysis)
- Avoid biological explanations for healthcare disparities or inequities between racial and ethnic groups and recognize the intersectionality of many sociodemographic and systemic factors that may be associated with such disparities and inequities
- Don't use "non-White"—specific groups should be indicated. If there is a reason for classifying this way, authors will be asked to justify and explain

Christiansen then spoke again, this time about updates to JAMA Network journals' instructions for authors regarding the collection and reporting of demographic data on race and ethnicity. The methods section should identify who determined participant race and ethnicity, what classifications were used, and how this was done, as well as why race and ethnicity were assessed.

The AMA Manual committee is also reviewing and updating the rest of the chapter on inclusive language, including sections on sex and gender, sexual orientation, age, socioeconomic status, ability, and persons with diseases, disorders, or disabilities. Updated guidance will be made available online once completed.

Tracy Frey spoke next about current guidance and recent changes to the inclusive language section regarding sex and gender. Current guidance includes using "sex" for biological factors and "gender" for identity or psychosocial/cultural factors and defining the different terms used; explaining the methods used to obtain information on sex and gender; reporting the distribution of study participants or samples; and reporting data for all participants, not just the category representing the majority of the sample. In research reports, all main outcomes should be reported by sex (or gender, if appropriate) wherever possible. Choose sex-neutral terms for nonresearch reports.

Frey then spoke about new guidance being discussed as part of the AMA update:

- Use pronouns when known; inclusive pronouns are acceptable
- Binary terms may be acceptable, depending on context
- Using LGBTQ/LGBTQ+ (lesbian, gay, bisexual, transgender, queer [or questioning]) and LGBTQIA (lesbian, gay, bisexual, transgender, queer [or questioning], intersex, asexual [or allied]) is acceptable, if defined
- Terms regarding sexual orientation and gender (e.g., bisexual, cisgender, gay, etc.) are acceptable as adjectives
- When reporting on pregnancy, avoid "pregnant women" or "women of childbearing potential"— "pregnant individuals", "pregnant patients", or "pregnant people" are preferred
- Be specific when referring to people by age group ("neonate/newborn" or "infant" rather than "baby"; "older adults" rather than "seniors", "the elderly", or "the aged"); avoid ageist terms
- Do not label people, populations, or countries by socioeconomic status—avoid general terms that are archaic or insensitive, such as "homeless" or "poor" ("people without housing" and "low-income" are preferable)
- Use person-first language when referring to conditions, diseases, disabilities, and abilities (e.g., "patients with diabetes" is preferable to "diabetics"). Avoid describing patients as victims or with terms that imply helplessness (e.g., "afflicted with", "suffering"). In some cases, such as with autism or deafness, identity-first language may be more appropriate

Annette Flanagin then spoke about an analysis of 688 studies published in JAMA, Lancet, and the New England Journal of Medicine (NEJM) between 2015 and 2019 to determine changes in the reporting practices of demographic variables, including race, sex, and socioeconomic status.<sup>2</sup> The authors of the analysis concluded that limited progress

was made in the reporting and representation of race and socioeconomic status in medical research between 2015 and 2019, while the reporting of sex was high. The authors also concluded that the impacts of systemic racism in medicine are being acknowledged, but that it is imperative to address and improve the way we represent, report, and include race, socioeconomic status, and sex or gender in medical research.<sup>2</sup>

Flanagin shared an example of what one journal is doing to improve the reporting of diversity in research studies: *NEJM* guidance states that reports of clinical trials must include a supplementary table providing background information on the disease, problem, or condition studied and the representativeness of study participants.

There was some discussion about postpublication name changes from the Joint Commitment for Action on Inclusion and Diversity in Publishing (of which all session speakers were part of). As a result, JAMA Network developed a policy about postpublication name changes, recognizing that authors can change their names for personal reasons (e.g., changes in identity or marital status) without requiring rationale. This may be done as a silent correction, meaning the correction will be made and the article redeposited in PubMed without a formal notice, or through the usual correction process that results in a published notice. JAMA Network will notify indexers and databases of the name change but cannot guarantee that they will make updates on their end.

JAMA Network also introduced a statement on potentially offensive content in regard to previously published content.<sup>3</sup> There is a plan to link to this statement in articles that have been identified as potentially offensive, with a notice similar to the way corrections or retractions are handled.

Patty Baskin then spoke about a new toolkit for equity from Coalition for Diversity & Inclusion in Scholarly Communication, debuting in summer 2022. The kit will include 12 sections on various topics and aims to set an industry standard promoting inclusive writing. Attendees were encouraged to sign up for the email list by contacting c4disc@gmail.com.

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## Preprints and Preprint Server Update

#### MODERATOR:

David S Riley Editor, The Permanente Journal Portland, Oregon @swihm\_health

#### SPEAKERS:

#### Nicolle Pfeiffer Chief Product Officer, Center for

Open Science Charlottesvile, Virginia @nicipfeif

#### Jessica Polka

Executive Director, ASAPbio San Francisco, California @jessicapolka

#### Clare Stone

Medical Content Editor, SSRN Oxford, England @Garvvdogg

#### REPORTER:

Sarah Frances Gordon Managing Editor, Psicología Iberoamericana Universidad Iberoamericana Mexico City, Mexico @SF\_Gordon

A preprint is scientific information, usually a full manuscript, posted to a preprint server under author control, whereas a journal article is peer reviewed and published under journal control. Preprints are not peer reviewed. They allow members of the scientific community to share scientific information and comments freely and quickly, which is why preprints were embraced early in the pandemic. However, preprints have a long history that began in the health sciences around 1961 when the National Institutes of Health began to share information through the Information Exchange Groups. In the past several years, in the wake of the popularity of preprints, health science journals have begun establishing relationships with preprint servers. This session focused on the preprint system and how it has evolved into an important part of the publishing process.

The session was moderated by David Riley, a medical doctor, and the editor of the Permanente Journal.<sup>1</sup> Riley began the session with his observations on how preprints have gained momentum during the pandemic as the public and health authorities have depended on the accelerated dissemination of research results to inform their decisions on vaccines and treatment for COVID-19. Some of the most popular preprint servers include BioRxiv,<sup>2</sup> arXiv,<sup>3</sup> PsyArXiv,<sup>4</sup> PrePubMed,<sup>5</sup> and medRxiv.<sup>6</sup> Preprints are a rapidly developing area and have begun to influence many fields of science affecting researchers, scientific journals, and editors.

Nicolle Pfeiffer, the Chief Product Officer at the Center for Open Science, was the first speaker and highlighted the benefits and challenges of preprints. The benefits of preprints include the rapid dissemination of research results to the public and scientific community, increased access to research, and increased collaboration. Additionally, when a preprint is posted on a server, it facilitates faster feedback by a broader community, which can strengthen the quality of the paper when it is finally peer reviewed and published. Challenges that the preprint system may face include lack of peer review, lack of trust, and information overload.

Jessica Polka, the executive director of ASAPbio, presented second and discussed how preprints are an opportunity for people to engage more informally with a manuscript and provide valuable feedback. Polka also voiced her concerns about the preprint system, which include how the dissemination of preprints can lead to misinformation and information overload amongst the public. Other concerns raised include the risks associated with premature media coverage of a preprint, publicly sharing information before peer review, uncertainty about copyright and licensing of preprints, and preprint authors potentially getting scooped by others.

However, despite these challenges, there is still a need for the rapid dissemination of research results and feedback from a broader community. Polka contends that it is important to create incentives for preprint peer review, such as the recognition of preprint reviews by institutions. Publicly reviewing a preprint helps increase the rigor of scientific work because criticisms can be validated by others. It also enables participation from a wider scientific community as the full draft of the manuscript is openly available on the server to researchers across the globe. Public reviews of preprints also help complement the peer-review process and help provide context and expert evaluation of the work. Polka argues that you should go one step further and publish your preprint reviews to document your scientific labor.

Clare Stone, a medical editor at SSRN,<sup>7</sup> which is affiliated with Elsevier, presented next and spoke about how preprints have evolved in the medical field. For example, at The Lancet,<sup>8</sup> authors can opt-in at the submission stage to post their manuscripts on the SSRN preprint server (Figure 1).

Stone emphasizes how preprints impact health policies in real time and help save lives. As noted by one of the SSRN authors, "Everyday matters in the preprint medical world." However, Stone also discussed the potential risks of preprints and opined that researchers have a responsibility to their community to ensure that what they post on preprint servers is accurate and does not cause harm. It is also vital that preprint servers differentiate between a preprint and





a published article that has been peer reviewed. Preprint servers often have warnings that the manuscript has not been peer reviewed and provide watermarks on the manuscript to help prevent confusion among readers (Figure 2).

The session highlighted how the preprint system has taken on a life of its own and has been especially valuable during the COVID-19 pandemic. Horby<sup>9</sup> writes in an opinion piece in *Nature Medicine* that he "cannot envisage a future without such rapid dissemination of new evidence"<sup>9,p.1</sup> He concludes that given the important role preprints now play, the medical community and policymakers must use their critical thinking skills and scientific methods to ensure they make sensible decisions, regardless of whether a manuscript is peer reviewed or not.<sup>9</sup> This sentiment was echoed through the voices of Riley, Pfeiffer, Polka, and Stone during the session, as they solidified the argument for preprints in science.

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## Social Media 101 for Journals: How to Create and Sustain an Effective Campaign

MODERATOR: Kelly Hadsell Federation of State Medical Boards @kellvhadsell

SPEAKERS:

Alexandra Kahler KnowledgeWorks Global @KWF\_Info\_Mgmt

**Betsy Donahue** Digital Science Philadelphia, Pennsylvania @BetsyDonohue **Glenn Landis** 

American Society of Hematology Washington, DC

#### **REPORTER:**

Emilie Gunn American Society of Clinical Oncology Alexandria, Virginia @emiliemgunn

More and more journals are using social media these days for many different purposes. Regardless of your organization's goals in social media, it is important to be strategic about it, and a session at CSE's 2022 Annual Meeting highlighted some ways that journal editors can launch and sustain a successful social media campaign.

Being active on social media is not a "plug and play" type of project. It requires planning before you get started, care and feeding during a campaign, and reflection and analysis once a campaign is complete. All three speakers in the session addressed the various considerations of setting up social media and successfully using it to promote a journal.

#### **Getting Started on Social Media**

Before you get started with a social media channel, make sure you have specific goals for the use of social media. In his presentation, Glenn Landis, Senior Director of Publications at the American Society of Hematology, advised attendees to determine what purpose they want social media to serve for their journals. Some journals use social media to increase engagement between authors and the journal, some want to improve discoverability of their journal content and in turn increase citations, and others use social media to strengthen their brand. Each journal, even if it comes from the same publisher or society, will likely have a unique purpose for utilizing social media. That purpose should help to drive the next decisions about where to be active on social media, when to post, what to post, etc.

With your social media goals established, it is time to start thinking about your social media policy. Make sure your organization has a policy in place, and that it is easily accessible on the journal website. Alex Kahler, Editorial Director at KnowledgeWorks Global, recommended that a journal's "policy should make it clear what behavior will or will not be tolerated online." Kahler recommended in particular to include the right to remove any posts or comments deemed inappropriate. Behind the scenes, make sure to also have a response policy in place, so that when problems do arise, the journal can act quickly, and not have to scramble to react to the situation. Decide what you will do when a user posts something that is critical of the society, the journal, or a particular paper. Some organizations will ask authors to respond to comments, others will do it themselves.

Next, you may need to make a case to your editor before getting started on social media. Landis reminded listeners to remember that authors are already talking about your content, whether you want them to or not. Having a social media channel, whether on Facebook, Twitter, Instagram or somewhere else, allows you to control at least part of that conversation. In addition, scan the landscape to see what others in your space are doing. Are your authors, editors, and/or reviewers active on social media? What about your competitors? Answers to these questions may help convince a reluctant editor to get started on social media.

Editor on board? Time for nuts and bolts! The first big question is which social media platform your publication should utilize. This is where sources like Altmetric can be helpful. Betsy Donahue, Managing Director, Publisher Relations at Digital Science, explained that depending on the journal's focus, different platforms may be appropriate. You can use Altmetic to find where users are already talking about your content. Are your authors active on Twitter? Facebook? Determining where your authors are active allows you to be in the right place to take part in the conversation around your content. There are practical considerations as well when deciding on a social media platform. For example, Facebook Business Manager allows you to manage both Facebook and Instagram. But while you can manage an organization's Facebook page without it, you can't manage Instagram without it. And if you are new to using Facebook Business Manager, Hootsuite provides a guide for setting up an account. Some organizations also utilize LinkedIn, but that can be a bit trickier. LinkedIn requires that all accounts be linked to an actual person, and

#### Social media policy

•	Should be stated on journal website	Social Media Disclaimer [JOURNAL] has several social media channels, including, but not limited to Facebook and Twitter. We encourage you to take a look at them and engage with our content. We appreciate open discussions and commentary on all our posts. We do not offer comment or provide responses to questions regarding medical direction or advice.
•	Allows you to delete inappropriate comments	<ul> <li>When posting to [JOURNAL], please be sure to: <ol> <li>Maintain HIPPA Guidelines regarding posting of any privileged content, including all personal identifiable information (email addresses, addresses, phone numbers, account numbers etc.)</li> <li>Refrain from profanity, defamatory posts, or other offensive or inappropriate commentary</li> <li>Refrain from posts that spam, solicit, advertise, promote, or endorse any financial, political, or government organization</li> <li>Post marketing message or links to external sites for promotional purposes</li> </ol></li></ul>
•	Response policy	As Administrators of our [JOURNAL] site, we reserve the right to moderate all content and block users who violate our guidelines.

they do not want accounts associated with organizations. So if your organization will be posting on LinkedIn, be sure that an actual person owns that account (and make sure you have a plan in place to transfer that account to someone else if the first person moves on!).

Landis recommends asking yourself where responsibility for social media activities fits within your society or publisher. In other words, who will do the legwork? That work may be up to the Editorial Team, Marketing, or someone else (or perhaps a combination of many different teams). What about if you have multiple journals? Will you be able to accommodate the needs of them all in your social media strategy?

#### Social Media Posting 101

Once your social media channels are all set up and ready to go, there are several things to consider about your posting tactics.

First, decide how you will choose which content to post. Some journals simply post every article that is published. While this removes the decision making from the process it also makes it harder to highlight those articles the journal really wants to promote. Other journals have their editors select certain articles to post about on social media. Selecting a subset of articles for posting may give the editor more time to construct higher quality posts that are more likely to engage followers.

Scheduling tweets is key. Kahler recommended that it is most efficient to post 2 weeks of content at a time. Hootsuite can then automatically schedule the time of your tweets to get the most traction based on usual levels of activity on your channel. This also allows you to notify the authors when their paper will appear on social media. The journal can ask the author to engage with that post by commenting or retweeting to ensure as many followers as possible see it and engage with it.

Kahler also suggested that editorial offices add social media information in their email signatures. This is an easy way to remind authors of where to find the journal on social media.

#### **Measuring Success**

Once you get the channel up and running, don't just let it go. Make sure to monitor each account and report on data from it, so you can understand whether you are reaching the goals you set out at the beginning. Donahue explained how article level metrics, specifically Altmetric, can be used to measure and drive engagement with journal content, since it can indicate online engagement in ways that go beyond traditional citation metrics. Altmetric differs from other traditional article metrics in that it informs on the societal impact of a particular article, and not just reaction from the research community.

Global Ltd.

Traditional metrics such as citations can take months or years to appear. The benefit of Altmetric is that article attention, such as Twitter mentions or appearances in the news, can begin to develop as soon as hours after publication. Using Altmetric to track how certain articles or tweets are doing can tell you what people are saying about your content right now, as opposed to waiting to see how a paper will be cited over the next few years. Knowing which articles are being talked about can inform your social media strategy by showing you where to focus attention.

Altmetric Explorer allows you to see who tweets about your content the most. Perhaps these are the people you want to invite to host a tweetorial about one of your papers, or perhaps even serve as reviewers or editorial board members. Use Altmetric Explorer to see what your most popular content was this week and promote that on social media, or build rapport by letting the authors know how popular their article was. You can even use Altmetric Explorer to get more information on your competitors via a new journal dashboard called Google BigQuery. The tool compares journals to a baseline as well as competitors and helps publishers see where they can improve.

Social media platforms are always changing, and channels require constant care and feeding. With this information in your back pocket, you will be poised and ready when your editor decides they want to do LinkedIn too! And Instagram, and Facebook, and...

## Tweet, Tweet: Social Media Toolkit for CSE Professionals

#### MODERATOR:

Jennifer A Regala Director of Publications/ Executive Editor American Urological Association Linthicum, Maryland @JenniferARegala

#### SPEAKERS:

Heather DiAngelis Associate Director of Publications Transportation Research Board: National Academies of Science, Engineering, and Medicine Washington, DC @hdiangelis

#### Dana Compton

Managing Director and Publisher American Society of Civil Engineering Reston, Virginia @danamcompton

#### Angela D Cochran

Vice President, Publishing American Society of Clinical Oncology Alexandria, Virginia @acochran12733

Jennifer A Regala

REPORTER: Becky Fargen Journal Manager Elsevier

Social media can be a useful tool for professionals to develop connections, build an audience, and promote their company's publications, but it can be daunting to get started. This session discussed helpful dos, don'ts, examples, and case studies of using social media for science editors.

To start, Heather DiAngelis gave a handy list of dos and don'ts of using social media as a platform for your organization. The takeaways were: DO choose a platform you can do well on, know your audience, be relatable, interact with others, and consider the timing; DON'T bash your colleagues, be disrespectful, bore people, or send unsolicited messages asking for their time or money. Knowing your audience was a key theme that was repeated in this talk. For example, Facebook might be better suited for only family and friends, whereas LinkedIn is tailored more for professional use. However, it is OK to occasionally tweet an amusing tidbit about a work woe that others can relate to or a funny story that happened at work—without bashing your coworkers or being overly negative.

In addition to knowing your audience, viewing social media as two-way was also a recurring theme: Liking, commenting, following, and messaging others will enhance your social media experience and help you/your organization get more use out of it. You cannot expect others to come to you without interacting with them.

Since DiAngelis's dos and don'ts list was so informative, Dana Compton decided to focus on presenting some case studies. As an example of the tip of knowing your audience, she talked about the American Society of Civil



Engineering's (ASCE's) experience of using Twitter, LinkedIn, and Instagram only to discover that the Instagram site was mostly popular with photographers. Since that was not the target audience, they closed the Instagram account and focused on their Twitter and LinkedIn pages to promote different publications and conferences.

Compton also discussed using social media for crossdivisional cooperation. This includes liking or retweeting posts from other departments, for example, retweeting a technical institute that promoted an ASCE journal, or favoriting an ASCE government relations post. ASCE is also focusing on a visual approach, including a monthly infographic connected to a related journal collection. These visual social media posts are sometimes retweeted, liked, or shared by other departments or Board members, which can add to the promotion.

Next, Jennifer Regala gave some tips and examples of successfully using social media. "Your social media skill level doesn't matter"; instead, she recommends thinking about how to connect your message, understanding your organizational needs, and thinking about how your publications fit into that. Regala also gave some dos and don'ts: do be organic and fluid, do be engaging, do be simple, and do use visuals (including emojis!), but don't be all over the place and don't be rude. "If it's a bad day, put your phone away." You can also find social media experts in your community, and don't be afraid to ask for help. The point is to have an article live on.

Some fun examples at the American Urological Association (AUA) include live-tweeting about the "swag" from the firstever publications booth. Next year, the publications booth plans to include a Pet of the Month calendar featuring editorial board members' pets. The AUA also posts visual



abstracts, usually reaching tens of thousands of people. Sometimes this can include a Throwback Thursday post with an in-house graphic of an old article. The Online Content Editors, who provide strategic social media thought leadership to the AUA's society publications, are a big help to the AUA.

The final speaker, Angela Cochran, gave some quick tips for using social media in scholarly publishing. Some handy tools are Symplr, which shows influencers of specific hashtags, and Altmetric, which shows who and what is trending. These can help find social media influencers to follow or engage with. Google News Alert can also help find interesting things to highlight. For example, the Los Angeles Times' *High*  School Insider recently covered a JCO Global Oncology article. Cochran gave a good recommendation not to engage in social media when tired or cranky—for her, this is after 3 p.m. on Fridays. As DiAngelis pointed out afterward, "What you say can alter someone's perception of you."

Several questions were brought up in the Q&A. Some topics included who should have access to the social media logins at a workplace, having a consistent voice, and community engagement. One audience member shared a story that her husband Facebook-friended some colleagues only to have to fire one of them shortly after. This led to the decision to not have any coworkers on Facebook, which ties back to knowing your audience.

## Recommendations for Handling Image Integrity Issues

#### MODERATOR:

**Teodoro Pulvirenti** Director of Publishing Integrity and Partner Services American Chemical Society

#### SPEAKERS:

#### Sowmya Swaminathan Head of Editorial Policy and

Research Integrity Nature Portfolio Springer Nature

#### **Bernd Pulverer**

Head of Scientific Publications EMBO **Catriona Fennell** Director of Publishing Services

Elsevier

#### Jana Christopher

Image Integrity Analyst FEBS Press

REPORTER: Tony Alves Highwire Press

The session, "Recommendations for Handling Image Integrity Issue," was Moderated by Teodoro Pulvirenti, Director of Publishing Integrity and Partner Services at the American Chemical Society, and started with a panel discussion on the work of the STM Standards and Technology Committee (STEC) Working Group in Image Alterations and Duplications.<sup>1</sup> The panel included Sowmya Swaminathan, Head of Editorial Policy and Research Integrity at Springer Nature; Bernd Pulverer, Head of Scientific Publications, EMBO; and Catriona Fennell, Director of Publishing Services at Elsevier. The panel discussion was followed by a presentation on how to identify image integrity issues by Jana Christopher, Image Integrity Analyst at FEBS Press.

The panel discussion started with Fennell reviewing the history and objectives of the Working Group on Image Alterations and Duplications, an initiative launched by the STEC at STM. The working group was established to answer shared questions that many publishers had around image issues, and to identify tools that could be used to detect image manipulation before publication.

The working group created a list of recommendations for editors and journal staff handling image integrity issues based on the collective experience of the working group. The hope is that these guidelines will be complimentary with other guidelines such as those by the Committee on Publication Ethics (COPE)<sup>2</sup> and the Cooperation & Liaison between Universities & Editors.<sup>3</sup> The lack of a consistent, structured approach decreases editors' confidence in how to deal with image issues and the lack of standard classification prevent the creation of good tools. It is hoped that these issues will be addressed by the recommendations. A draft of the recommendation<sup>4</sup> was posted on the OSF preprint server in September 2021. Comments were submitted by the community, and those comments were reviewed and incorporated into the final draft. That revised version<sup>5</sup> was published in December 2021. It will be revised in the future as well.

Swaminathan addressed the structure of the recommendations and the principles that were defined by the working group. She stated that research is at the heart of everything we do, and researchers are responsible for the quality of the data and for the research. The first set of principles is focused on the researcher and are intended to be broadly framed—images should reflect the condition of the original data collection and should not be enhanced or edited. A core principle is transparency in how images were generated and what, if any, processing was used on the images. Any transformations should be described so that editors, reviewers, and readers can understand what was done to the image and why it was done. Journals may want to incorporate these principles in their guidelines.

A second part of the core principles is about editors and what they bring to the process. Pulverer discussed how journal editors should handle image manipulation issues. Editors must support the reliability of the scholarly literature. It is not up to the editor to sanction the author. Due diligence is important, but editors cannot be expected to detect all instances of image abuse. It is important to understand that not all image issues are meant to deceive; sometimes, the manipulation is an enhancement or a mistake. The recommendations also state that source data can be requested to help determine if manipulation is intended.

Sometimes readers question image integrity postpublication. Fennell pointed out that these concerns need to be addressed, as it is an important part of correcting the literature. Some editors are uncomfortable when the report is anonymous. Editors are asked to look at the merit of the comments, not the source of the comments. COPE has good flowcharts, and the COPE guidelines are the basis for the STM recommendations. The editor should assess the evidence, and it is up to the editor to decide if the author should address any questions. The interchange between editor and author could become part of the public record, including a letter to the editor and retraction notices. The editor should respect the confidentiality of the reporter and their anonymity should be maintained.

It is important to remember that the aim of the recommendation is not to police the author, but rather to work with the author and to provide a service to the community.

The working group also created a classification of image alterations. Swaminathan described the classifications as a structured decision-making framework, which is a device to help editors make consistent decisions about the impact that a problem image has on the integrity of a paper and determine the kind of editorial action that should be taken. The recommendation has three levels of increasing severity along with a description of each level, and a recommendation of the action that the editor should take. There is a constellation of issues that will affect action and outcome. For example, a level 1 issue (least severe) may be so pervasive that it affects confidence in the integrity of the findings, and so it will cause the editor to take a more severe action. The levels were based on three considerations: 1) type and severity of the anomaly; 2) whether it is a result of an error or is an intentional manipulation; and 3) impact of the problem image on the main conclusion of the studies.

Pulverer reminded the audience that the STM recommendation leans heavily on the COPE guidelines. Those guidelines provide a sequence for investigation and describe the nature of what actions should be taken. These include recommendations on interactions with authors and institutions. Actions might be very different depending on whether the problem is found prepublication or postpublication. There is more flexibility when dealing with issues during prepublication. In most cases, an author's institution should be notified because they can be more effective and have a stronger position with the author. Editors are focused on the integrity of the scientific record and should not be perceived as out to get the author.

Swaminathan added the nuance that intent is not the final arbiter of outcome and the actions that are taken, it is the impact of the error on the research that is the important consideration. Does the article's claim stand?

Pulverer made the point that they have not fully outlined corrective measures, and that currently, there are only two choices, either correcting a paper or retracting the entire paper. There needs to be a more nuanced set of tools that help correct the scientific record without the drastic measure of retraction.

Finally, the challenge of creating generalized recommendations was discussed by Fennell. She noted that different publishers have different policies and take different measures to correct the record. But because the working group was a good representative sample of publishers, finding common ground wasn't too hard. A bigger challenge is that disciplines are very different, and it is hard to find solutions that work across disciplines. The recommendations are not exclusive to the life sciences, but that is where most of the data are available, and image analysis tools are trained on life science data. A lot of work needs to be done in other subject areas. The recommendations may need to be more general in the future.

Jana Christopher, Image Integrity Analyst at FEBS Press, wrapped up the session with a deep dive into how to identify image integrity issues. There is a clear distinction between individual misconduct and systematic fabrication of research data (paper mills). Christopher works mostly in biochemistry, so most of the techniques are focused on western blots and gels, microscopy images, photos of animals and plants, plots, and graphs. She uses Photoshop to enhance images to find manipulation. She changes contrast, uses color tones, rotates panels, and looks at edges of images because that is often where overlaps will happen. Cloning of an image is hard to detect because there is no obvious manipulation. She says to always look for odd cuts in the image, as this means the author has assembled the image via copy and paste (Figures). You often need the raw data to detect these problems. There are automated screening tools that are good at picking up duplication, but they are not as good at detecting manipulation. The tools are improving, but people are still better at going deep into the forensic investigation.

Christopher then turned to a discussion of paper mills, organizations that fabricate studies that are then sold to researchers who are trying to publish. The data is often falsified, it is not clear if the experiments have actually been performed, and the same images may have been used multiple times to represent different experiments.

Focusing on how paper mills manipulate figures, they streamline the process of manipulation to make it cost effective by reusing images and labeling them differently in different papers. They use modified versions of images, and



**Figure.** Example of image manipulation where the image has been rotated in. order to make it look like a different image.

they create and invent images, which can be hard to detect. They reuse data sets and generate bar graphs from the data, using the same graphs in multiple papers. A lot of journals now ask for raw data, and they should clearly specify what is acceptable as raw data. Raw data should be uncropped, unprocessed images.

Christopher concluded with some recommendations for combating organized fraud:

- Increased vigilance and prepublication integrity checks
- Request raw data—be aware even raw data might be falsified
- Educate peer reviewers
- Faster retraction of fraudulent papers

- Share knowledge and tell-tale signs of paper mills
- Stronger incentives for responsible research practices like data sharing
- Collaborations between publishers

#### **References and Links**

- https://www.stm-assoc.org/standards-technology/working-groupon-image-alterations-and-duplications
- 2. https://publicationethics.org/resources/flowcharts/imagemanipulation-published-article
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# How to Implement Rapid Updates to Guideline Publications

MODERATOR: Emilie Gunn American Society of Clinical Oncology Alexandria, Virginia

@emiliemgunn

### SPEAKERS:

Annals of Internal Medicine Philadelphia, Pennsylvania

Dax Rodulfa-Blemberg American Society of Hematology Washington, DC Helen Macdonald BMJ

United Kingdom

#### REPORTER:

Heather DiAngelis Transportation Research Board at the National Academies of Sciences, Engineering, and Medicine Washington, DC @hdiangelis

As noted by Emilie Gunn, Director of Journals at the American Society of Clinical Oncology, it is becoming increasingly important for medical societies to implement rapid updates to guideline publications to provide the most current recommendations to clinicians and medical professionals. Medical societies have unique responsibilities to authors, readers, members, and patients, and publishers must balance the needs of each contingent; at the same time, journals need a way to streamline the publishing process while also driving citations and usage. Three speakers from medical journals presented about how their organizations were adapting their guideline publication processes to meet these challenges.

Jill Jackson, Managing Editor for Annals of Internal Medicine, was the first presenter; she provided an overview of Annals's processes and policies for updating living guidelines after publication, which began in 2020 and are also known as "practice points" within the journal. Jackson defined practice points as "living advice that regularly assesses and incorporates new evidence" and noted that they are designed to "provide clinical advice based on the best available evidence for the public, patients, clinicians, and public health professionals." The editorial staff regularly reviews living guidelines to request updates, which sometimes involves the author creating a heavily updated version of the article that becomes Version 2. In addition, minor updates are published as a letter and linked to the original article.



**Figure.** Issues surrounding updates to guideline publications. Credit: Emilie Gunn.

Dax Rodulfa-Blemberg, Senior Managing Editor for the *Blood* Journals at the American Society of Hematology, spoke second. His organization used the publishing model for errata as a framework for creating processes for living guidelines; using a similar method, they were able to publish updates as individual publications interlinked with the original guideline. The top considerations of living guidelines included the function and purpose of the publication, how to correctly identify authorship, discoverability of updates, and flexibility of content. Rodulfa-Blemberg noted that as their model grows, flexibility remains the most difficult hurdle to refine.

Dr. Helen Macdonald, Research Integrity Editor at BMJ, described her organization's desire to shift from prepandemic processes for guideline updates. This included a single DOI and title, the word "living" in the title, a post production resend, a forecast section for potential future updates, and old versions stored as supplementary files. She noted that living content also has major author implications that require discussion, such as authorship changes, DOIs, timelines and approaches for updates, approaches to internal and external peer review, and funding.

During the extensive question-and-answer period that followed, Jackson, Rodulfa-Blemberg, and Macdonald addressed the challenges and decision-making behind naming and dating various versions of content and defining authorship, visions for non-COVID-related guidelines, and the origination of their respective models. There are about 34,550 active scholarly peer-reviewed journals, collectively publishing about 2.5 million articles a year.

(The STM Report, Fourth Edition)

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