

EQUITY AND DIVERSITY IN THE AAPM AND JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS

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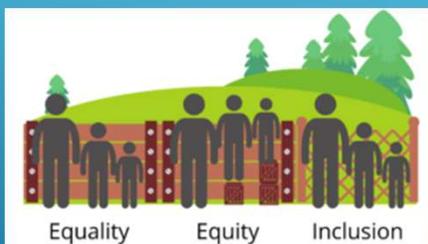
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Medical Physics and the Journal of Applied Clinical
Medical Physics: The Evolving World of Publishing

LEARNING OBJECTIVES

- ▶ Recognize equity, diversity, and inclusivity in the scientific publishing process
- ▶ Understand how journals are evolving

WHAT IS EDI?

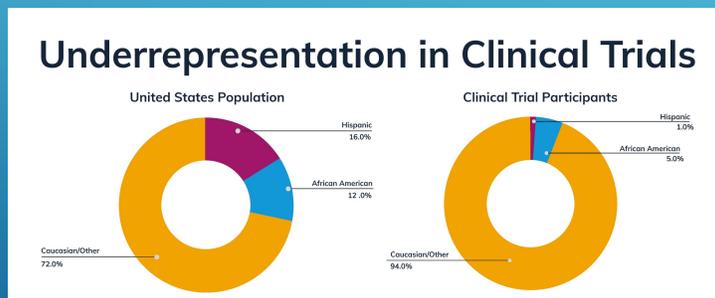


<https://www.equasense.co.uk/equality-equity-diversity-and-inclusion-making-sense-of-the-jargon/>

- ▶ Equity – Creating conditions that allow everyone to reach their full potential
- ▶ Diversity – All the ways that people are different
- ▶ Inclusion – Creating an environment of belonging, respect, and support

DIVERSITY IN CLINICAL TRIAL REPRESENTATION

Patient race, gender, language, socioeconomic status, geography, sexual orientation, age, behaviors (healthy and unhealthy), genetics, underlying conditions

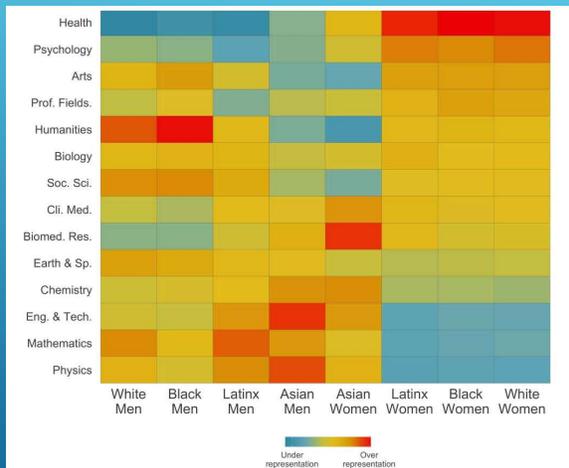


Luther T. Clark, Laurence Watkins, et al, Increasing Diversity in Clinical Trials: Overcoming Critical Barriers, Current Problems in Cardiology, Volume 44, Issue 5, 2019, Pages 148-172

Universities typically host clinical trials, which aren't always accessible to a diverse population

Low socioeconomic status populations are often taken advantage of

DIVERSITY IN AUTHORSHIP

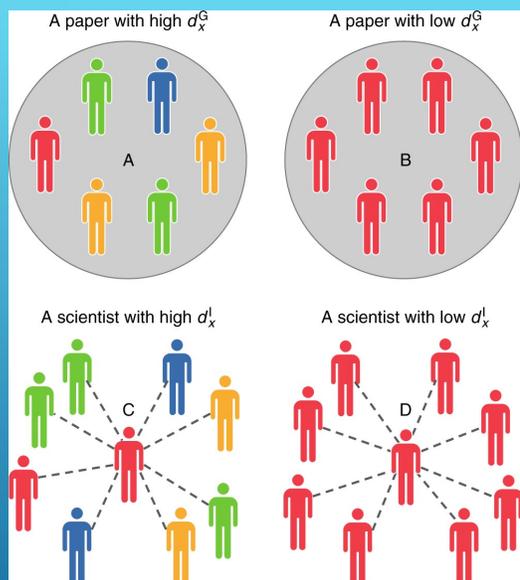


Race, gender, age, geography, access, experience, language, education, training, money, support

Kozlowski, Diego, et al. "Intersectional inequalities in science." Proceedings of the National Academy of Sciences 119.2 (2022).

WHY DOES EDI MATTER?

- ▶ Pursue a wider range of topics and research questions
- ▶ Promote entry of new researchers of all backgrounds to advance and excel throughout their careers
- ▶ Benefit all of society through equitable and widespread impact of research outcomes



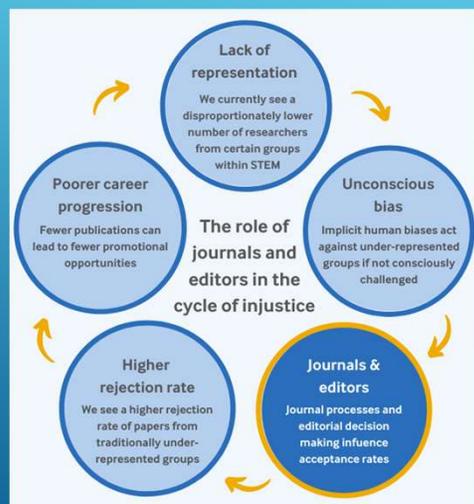
AlShebli, Bedoor K, Talal Rahwan, and Wei Lee Woon. "The Preeminence of Ethnic Diversity in Scientific Collaboration." *Nature communications* 9.1 (2018)

The preeminence of ethnic diversity in scientific collaboration, AlShebli et al, 2018

A paper with a high impact factor is written by a diverse group of authors. Similarly, a scientist with a high impact factor is surrounded by a diverse group of collaborators

List is the from the Joint Commitment "What are the benefits of using standardised questions to collect diversity data?"

STATUS OF EDI IN SCIENTIFIC PUBLISHING



<https://www.bmj.com/company/researchintegrity/support-social-justice/>

- ▶ Most editors of top-cited journals are straight, white men
- ▶ Research conducted by women receive fewer citations
- ▶ There is a disproportionately higher rejection rate for authors from underrepresented groups

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Male editors: Gender, Race, Ethnicity, and Sexual Orientation of Editors at Leading Medical and Scientific Journals A Cross-sectional Survey (Salazar et al) in 2021

Women citations: Gender Disparity in Citations in High-Impact Journal Articles (Chatterjee et al) in 2021

Underrepresented: Disparities in publication patterns by gender, race and ethnicity based on a survey of a random sample of authors (Hopkins et al) in 2013

The BMJ has outlined the cycle of injustice in the publishing process and defined the role of the journal and editors

The BMJ is one of the publishers that signed the [Joint Commitment for Action on Inclusion and Diversity in Scholarly Communications](#), which I'll discuss in more detail. As part of that commitment, they've evaluated the impact of journals and editors on evolving scientific publishing, with EDI in mind

WILEY AND JACMP'S COMMITMENT

“Joint Commitment for Action on Inclusion and Diversity in Publishing”

Aims to drive positive change within scholarly publishing

1. Understand our research community
2. Reflect the diversity of our community
3. Share success to achieve impact
4. Set minimum standards on which to build

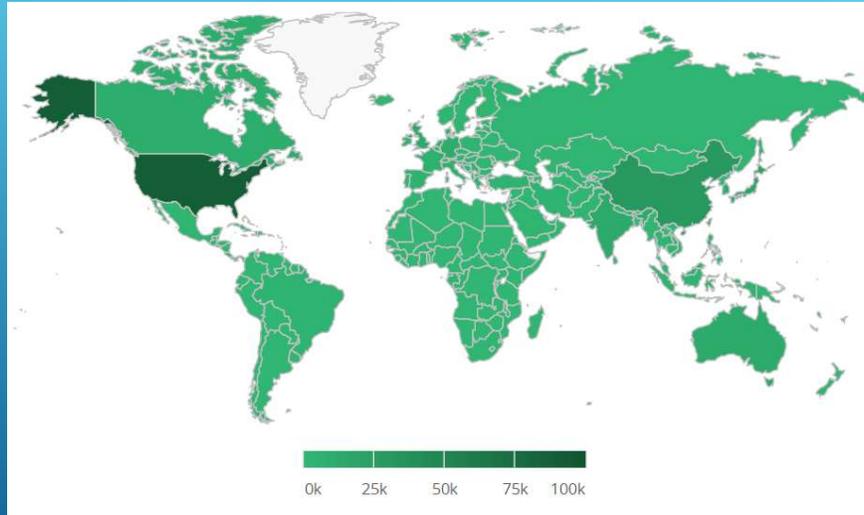
JACMP, publishing through Wiley, abides by the

MINIMUM STANDARDS

1. Ensure inclusion and diversity are integrated into publishing activities and strategic planning.
2. Work to understand the demographic diversity of authors, editorial decision makers and reviewers, such as gender, geography and ethnicity data.

- 1: tasking leadership to make a statement and a plan within their publication
- 2: up to editors because they're the ones that actually see this data, it's not blinded

DOWNLOADS BY COUNTRY



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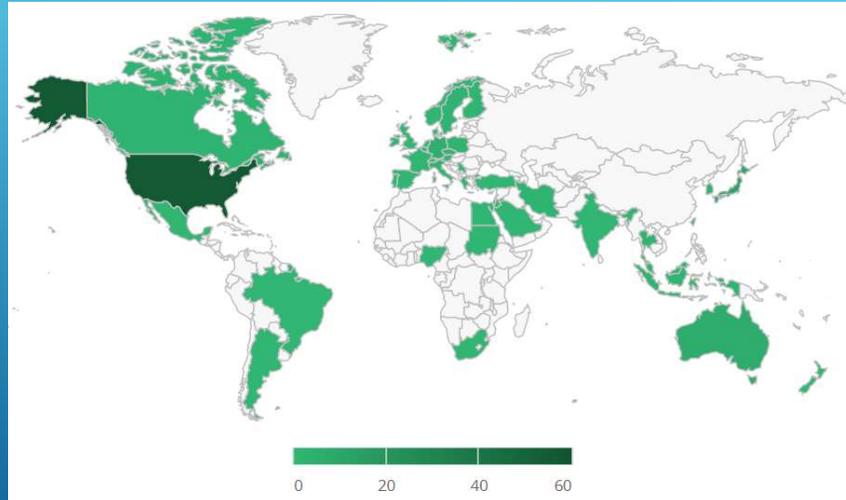
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Medical Physics: The Evolving World of Publishing

Sourced from Wiley Insights for JACMP

No gender or ethnicity data

Nearly every country in the world downloads from the JACMP

RESEARCH OUTPUT BY AUTHOR COUNTRY



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No gender or ethnicity data
Data for china is incorrect
Not every country is publishing. Why not?

EDITORIAL BOARD

Editorial Board

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 Stephen Ky, UT MD Anderson Cancer Center, Houston, TX, United States
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 Lixin Kumarswamy, Novant Health, Winston-Salem, NC, United States
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 Xiaoying Long, University of Florida Health Proton Therapy Institute, Jacksonville, FL, United States
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 Holly Lincoln, Yale New Haven Hospital, Waterford, CT, United States
 Wei Lu, Mayo Clinic, Phoenix, AZ, United States
 Bo Lu, University of Florida, Gainesville, FL, United States
 Weiguo Lu, University of Texas, Dallas, TX, United States
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 Qiuwen Wu, Duke University, Durham, NC, United States
 Poornam Yadav, Northwestern University Feinberg School of Medicine, Chicago, IL, United States
 Guanghua Yan, University of Florida, Gainesville, FL, United States
 Jizhaung Yang, UT MD Anderson Cancer Center, Houston, TX, United States
 Jun Yang, Alliance Oncology, Drakeville Hospital, Hawtorn, PA, United States
 Ruijie Yang, Peking University Third Hospital, Beijing, China
 Wensha Yang, University of Southern California, Los Angeles, CA, United States
 Xiaofeng Yang, Emory University School of Medicine, Atlanta, GA, United States
 Linghui Yin, University of Pennsylvania, Philadelphia, PA, United States
 Amy Shujing Yu, Stanford University, United States
 Geoffrey Zhang, H. Lee Moffitt Cancer Center, Tampa, FL, United States
 Jun Zhang, Ohio State University, OH, United States
 Miao Zhang, Memorial Sloan Kettering Cancer Center, New York, NY, United States
 Qinghui Zhang, St. Vincent Medical Center, New York, NY, United States
 Xiaobing Zhang, UT MD Anderson Cancer Center, Houston, TX, United States
 Yin Zhang, Rutgers Cancer Institute, New Brunswick, NJ, United States
 Yongbin Zhang, University of Cincinnati, Cincinnati, OH, United States
 Bo Zhao, Memorial Sloan Kettering Cancer Center, Uniondale, NY, United States
 Dandan Zheng, University of Nebraska Medical Center, Omaha, NE, United States
 Su-Min Zhou, University of Nebraska Medical Center, Omaha, NE, United States
 Dengsong Zhu, Saint Thomas Hospital, Murfreesboro, TN, United States

No gender or ethnicity data
 Does the reviewer/editor population reflect the author population? Or the reader population?

STANDARDIZED QUESTIONS

Gender identity

With which **gender** do you most identify? Please select **one** option:

- Woman
- Man
- Non-binary or gender diverse
- Prefer not to disclose

Race and ethnicity

What are your **ethnic origins** or ancestry? Please select **ALL** the geographic areas from which your family's ancestors first originated.

- Western Europe (e.g. Greece, Sweden, United Kingdom)
- Eastern Europe (e.g. Hungary, Poland, Russia)
- North Africa (e.g. Egypt, Morocco, Sudan)
- Sub-Saharan Africa (e.g. Kenya, Nigeria, South Africa)
- West Asia / Middle East (e.g. Iran, Israel, Saudi Arabia,)
- South and Southeast Asia (e.g. India, Indonesia, Singapore)
- East and Central Asia (e.g. China, Japan, Uzbekistan)
- Pacific / Oceania (e.g. Australia, Papua New Guinea, Fiji)
- North America (Canada, United States)
- Central America and Caribbean (e.g. Jamaica, Mexico, Panama)
- South America (e.g. Brazil, Chile, Colombia)
- Self describe* *[open text box]*
- Prefer not to disclose

How would you identify yourself in terms of **race**? Please select **ALL** the groups that apply to you:

- Asian or Pacific Islander
- Black
- Hispanic or Latino/a/x
- Indigenous (e.g. North American Indian Navajo, South American Indian Quechua, Aboriginal or Torres Strait Islander)
- Middle Eastern or North African
- White
- Self describe* *[open text box]*
- Prefer not to disclose

*where system functionality does not permit the collection of free-text responses, the use of "other" is an acceptable alternative to "self describe". Some publishers may also choose not to include a "self describe" or "other" option.

<https://www.rsc.org/new-perspectives/talent/diversity-data-collection-in-scholarly-publishing/>



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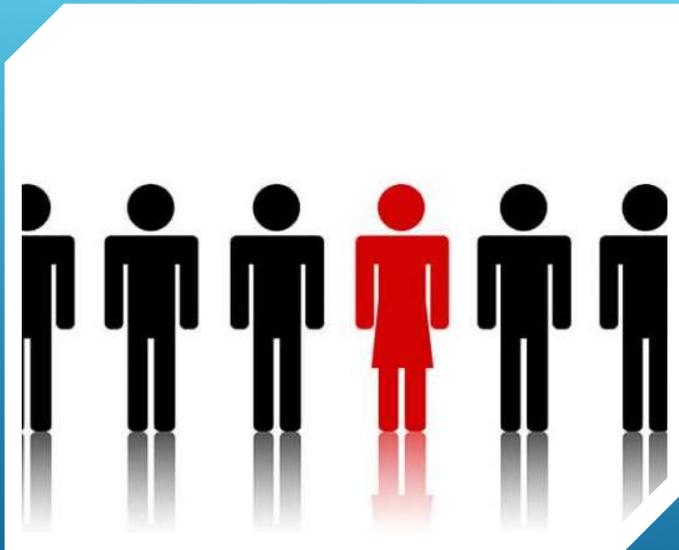
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<https://www.rsc.org/new-perspectives/talent/diversity-data-collection-in-scholarly-publishing/>

Standardized questions from the joint commitment

MINIMUM STANDARDS

1. Ensure inclusion and diversity are integrated into publishing activities and strategic planning.
2. Work to understand the demographic diversity of authors, editorial decision makers and reviewers, such as gender, geography and ethnicity data.
3. Acknowledge the barriers within publishing which authors, editorial decision makers and reviewers from under-represented communities experience and take actions to address them.
4. Define and communicate the specific responsibilities authors, editorial decision makers, reviewers and staff members have towards inclusion and diversity.
5. Review and revise as appropriate the appointment process for editors and editorial boards to capture the widest talent pool possible.
6. Publicly report on progress on inclusion and diversity in scholarly publishing at least once a year.



PROVIDE GENDER EQUALITY

- ▶ No manels
- ▶ Permit authors to change their name post publication
- ▶ Double blind review

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INCREASE UNDERREPRESENTED AUTHORS

- ▶ Provide author services to improve quality and readability
- ▶ Provide waivers/discounts for publishing fees
- ▶ Provide free/low-cost access to subscriptions
- ▶ Encourage data sharing



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ESL:

- developing a clear research story
- following English grammar and syntax conventions
- interpreting technical language in manuscript formatting instructions
- deciphering unclear or abrupt feedback from reviewers and editors who may assume that they are a native speaker.
- Manuscript rejections on the basis of language could mean missing out on significant research insights.

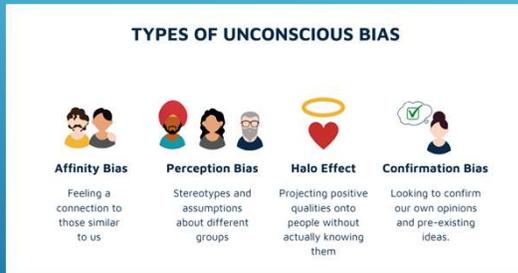
Data sharing also expands the pool of individuals who can conduct research. For researchers who are geographically dispersed or have limited resources, open and freely accessible data help foster scientific discovery. The Center for Open Science (COS) aims to “promote opportunity, particularly for those that have less access, as a mechanism to increase equity and to leverage all available talent” (Center for Open Science [COS], n.d.).

UPDATE THE REVIEW PROCESS

- ▶ Actively seek diversity when inviting editorials, commentary, blogs, special issues
- ▶ Screen offensive content and deal with complaints
- ▶ Develop reporting guidelines for diversity in human research

Reporting guidelines for research could potentially reduce the discrepancies in diversity of clinical trials noted in an earlier slide

DIVERSIFY THE REVIEWER POOL



- ▶ Diversify editorial boards
- ▶ Provide editorial fellowships
- ▶ Encourage diversity in authors and reviewers
- ▶ Collect demographic data from reviewers
- ▶ Address unconscious bias

Diversify your editorial team and advisory board

- Review your recruitment sources, and how you word invitations to join and use networks
- Ask board members to nominate colleagues from underrepresented backgrounds
- Expand your numbers (if needed) to gain diversity
- Consider having observers and/or associate members as a training opportunity. This is a good way to train new board members, creates earlier career research opportunities, and can gain more from those more experienced but with limited time

Diversify your peer reviewer pool

- Update your public-facing resources to encourage authors to recommend reviewers from under-represented backgrounds.
- Review invitation wording to ensure it is always inclusive
- Consider your sources for finding peer reviewers
- Consider your policies on co-reviewing and reviewer mentorship and how they are credited, this can be a good way of helping new reviewers gain experience.

REVIEWER SELF-REFLECTION QUESTIONS

- ▶ Pre-review
 - ▶ What personal assumptions, experiences, identities, and beliefs might impact how I perceive and evaluate this manuscript?
 - ▶ How do they impact my ability to provide a relatively objective review?
 - ▶ How might my cultural and professional worldview impact my evaluation of the manuscript?
- ▶ Assessing the manuscript
 - ▶ Do the authors report data on race, ethnicity, gender identity, and other facets of cultural identity?
 - ▶ How might sampling influence the significance, generalizability, and/or transferability of findings?
 - ▶ Does the manuscript address issues or topics relevant to marginalized groups?
 - ▶ Do the authors discuss implications for research, practice, training, or advocacy that have the potential to advance social justice?

Bancroft, S. F., Ryoo, K., & Miles, M. (2022). Promoting equity in the peer review process of journal publication. *Science Education*, 1–17. <https://doi.org/10.1002/sce.21733>

Pre-Review, Assessing the manuscript, Drafting the Review Letter, On-Going Learning

PreReview: What experiences or beliefs do I have that could impact my perception of this paper?

Assessing: Do the authors report data on race, ethnicity, etc and is their data transferable to other communities?

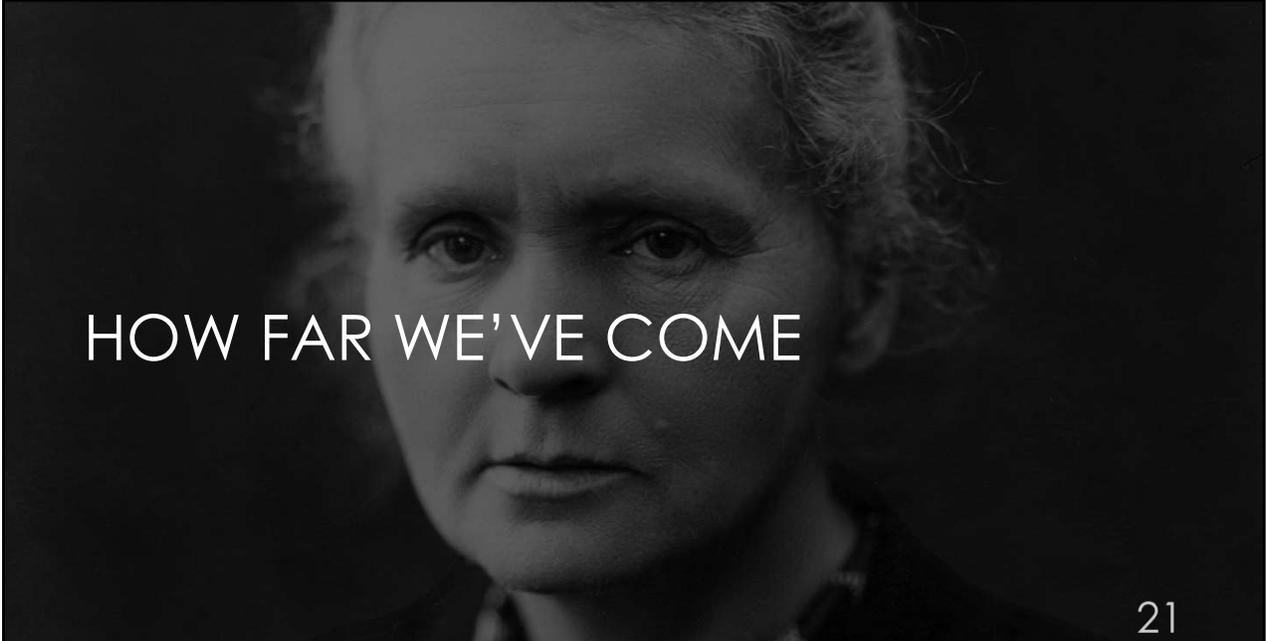
REVIEWER SELF-REFLECTION QUESTIONS

- ▶ Drafting the review letter
 - ▶ Have I developed and proofread my review letter to make sure it incorporates and promotes bias-free, systems-centered, and inclusive language?
 - ▶ Does my letter provide helpful and constructive feedback?
- ▶ On-going professional learning
 - ▶ How have I engaged in continual self-reflection and learning related to addressing cultural bias in my own worldview as well as in the research and peer review process more broadly?
 - ▶ Do I routinely consult readings and resources that center the perspectives of marginalized groups?
 - ▶ As applicable and appropriate, how can I incorporate or leverage support from editors and colleagues (e.g., peer groups) during the review process while maintaining the anonymized nature of the review?

Bancroft, S. F., Ryoo, K., & Miles, M. (2022). Promoting equity in the peer review process of journal publication. *Science Education*, 1–17. <https://doi.org/10.1002/sce.21733>

Review letter: Is my letter helpful and constructive? Does my letter incorporate inclusive language?

Ongoing: Have I self reflected on my own potential unconscious bias? Have I utilized the support provided by the journal?



HOW FAR WE'VE COME

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Madame Curie, a brilliant woman

Nearly didn't get the Nobel Prize

Didn't get promoted

Denied membership to the Academy of Sciences

Today, I stand up here as a woman in science, looking out at a diverse population of scientists

There is still room for improvement, but we've come so far

THANK YOU



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