

Equity and Inclusion in Peer Reviewing: Grand Challenges for Engineering Education Researchers

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Abstract— This workshop aims to help individuals write constructive and insightful reviews for scholarly work in engineering education research while considering aspects of diversity, equity and inclusion in the work. The topic, goal and activities of this workshop align with the conference theme of "Grand Challenges in Engineering Education" as it will help participants identify and overcome the challenges involved with equitable and inclusive peer review practices in engineering education research.

Keywords—engineering education research, peer review, positionality, anti-racism

I. WORKSHOP GOALS AND OBJECTIVES

A. Background

Peer reviewers are liaisons between a journal and members of its professional community and are thus crucial for creating an inclusive experience for authors. The process of peer review has been routinely criticized in academia for lack of quality reviews and reviewers, and reviews that are personal, biased and not constructive. Prior work has shown that failures in the peer review process contribute to exclusion, preventing new scholars, ideas, and methods from entering a field and thwarting the advancement of knowledge. These effects are particularly harmful to scholars from marginalized groups in science, technology, engineering and mathematics (STEM). Peer reviewing can promote equity and inclusion in our scholarly community by providing feedback to authors on aspects of their manuscripts such as bias-free language, treatment of vulnerable populations, and positionality of authors and reviewers.

Building on the collaborative experiences of the facilitators [1] and research they are conducting on training in peer review [2-5], this workshop will lead participants through a discussion of the review process and how peer review can help build an equitable and inclusive scholarly community. Through interactive discussions and small group activities, participants will explore the role of peer review, quality criteria for

scholarship in engineering education, equitable and inclusive practices when applying those criteria in the peer review process such as providing positionality statements. Recent editorials [6-9] focused on anti-racism in academic publishing will be discussed. These editorials include recommendations for reviewers to consider to promote anti-racism in the peer review process and take action against exclusionary practices in engineering education research.

B. Anticipated Outcomes

We anticipate that participants will be able to:

- Explain different quality criteria for scholarship in engineering education, and how they can be applied in peer review
- Highlight aspects of a manuscript that a reviewer could focus on to help authors improve their manuscripts and help editors make fair and equitable decisions
- Describe positionality statements and how they contribute to equity and inclusion in the peer review process
- Identify ways to enact anti-racism in the peer review process
- Enroll as reviewers for one or more engineering education journals

C. Anticipated Audience

Experienced reviewers as well as those who are interested in taking on review assignments for the first time are welcome to attend. Current members of editorial boards for engineering education journals may also be interested in attending to heighten their awareness of issues related to equity, inclusion and racism in engineering education scholarship. This also provides a networking opportunity for those new to the engineering education research community.

II. WORKSHOP ACTIVITIES AND AGENDA

The session will begin with group introductions that are intentionally designed to help participants network and establish a sense of trust, allowing participants to share ideas, pose questions and present counterpoints in an open and respectful environment. Activity 1 will involve individual reflection, small group discussions and a whole group discussion focused on identifying common themes in the peer review process, aspects of a high-quality peer review, and how peer reviewing contributes to equity and inclusion in engineering education research. A discussion will follow that focuses on positionality and accounting for bias in the peer review process. Activity 2 will involve participants reading three sample reviews and small group discussions of the strengths, weaknesses and areas for improvement for each review. This will be followed by an open discussion about putting anti-racism into action as a peer reviewer, with particular focus on gathering input from the international perspectives of the participants. This will be followed by an open discussion of issues related to inclusive practices in peer reviewing, again focusing on cultural differences in reviewing practices and expectations. The session will wrap up with providing a list of resources and instructions for signing up to be reviewers for engineering education journals.

- 0:00 - 0:15: Introductions: Opportunities to build networks of colleagues
- 0:15 - 0:45: Activity 1: Brainstorm about reviewing: Small and large group discussions of effective reviewing practices
- 0:45 - 1:15: Positionality in peer reviewing: Addressing bias in the peer review process
- 1:15 - 1:45: Activity 2: Review a review: Small and large group discussions about writing constructive peer reviews
- 1:45 - 2:30: Anti-racism in reviewing: Small and whole group discussions of global perspectives on anti-racism
- 2:30 - 3:00: Wrap up: Question and answer period with journal editors; resources for building reviewing skills and invitation to become a peer reviewer

III. QUALIFICATIONS OF WORKSHOP FACILITATORS

Lisa Benson, Rebecca Bates and Karin Jensen are co-investigators on a project funded by the National Science Foundation ("Collaborative Research: Building a Community of Mentors in Engineering Education Research Through Peer Review Training") focused on developing mentored peer review training experiences. Evan Ko is a research assistant and Gary Lichtenstein is the external evaluator on the project. Together they have developed workshop materials focused on issues related to equity and inclusion in the peer review process and the particularly challenging aspect of racism in academic publishing

[10]. Kristina Edström, Lisa Benson and Cindy Finelli are editors of two leading journals in this field, the *European Journal of Engineering Education* and the *Journal of Engineering Education*. They have previously collaborated on developing workshops and collaboratively conducted multiple workshops for peer reviewers [1] and authors [11].

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