Building a Community of Mentors in Engineering Education Research Through Peer Review Training

Karin Jensen (Prof.)

Karin Jensen, Ph.D. is a Teaching Associate Professor in bioengineering at the University of Illinois Urbana-Champaign. Her research interests include student mental health and wellness, engineering student career pathways, and engagement of engineering faculty in engineering education research. She was awarded a CAREER award from the National Science Foundation for her research on undergraduate mental health in engineering programs. Before joining UIUC she completed a post-doctoral fellowship at Sanofi Oncology in Cambridge, MA. She earned a bachelor's degree in biological engineering from Cornell University and a Ph.D. in biomedical engineering from the University of Virginia.

Mia Ko

Evan Ko is a recent graduate of the University of Illinois at Urbana-Champaign with a bachelors degree in Bioengineering and a minor in Material Science and Engineering. On campus, Evan actively participated as an Engineering Ambassador: encouraging younger students' interest in STEM related fields while changing the definition and conversation of what it means to be an engineer. Evan is very excited to be a part of the engineering education community and hopes to spark the interest of EER within their peer groups and to return to education after industry experience.

Gary Lichtenstein (Founder & Principal, Quality Evaluation Designs)

Gary Lichtenstein, Ed.D. is founder and principal of Quality Evaluation Designs, a firm specializing in education research and evaluation. My intellectual interests include mixed-methods research, program development and evaluation, and engineering education persistence. My expertise includes program evaluation, research design, proposal development, logic models, IRB and communities of practice.

Kelsey Watts

Kelsey Watts is a fifth-year graduate student at Clemson University. She is part of the Engineering Education Research Peer Review Training (EER PERT) team. She has also developed Systems Biology education modules to enhance computational thinking skills in high school students.

Rebecca A Bates (Professor & Chair)

Becky Bates received the Ph.D. degree in electrical engineering from the University of Washington. She also received the M.T.S . degree from Harvard Divinity School. She is currently Professor and Chair of the Department of Integrated Engineering at Minnesota State University, Mankato, home of the Iron Range and Twin Cities Engineering programs.

Lisa Benson (Professor)

Lisa Benson is a Professor of Engineering and Science Education at Clemson University, and the Editor of the Journal of Engineering Education. Her research focuses on the interactions between student motivation and their learning experiences. Her projects include studies of student attitudes towards becoming engineers and scientists, and their development of problem solving skills, self-regulated learning practices, and beliefs about knowledge in their field. Dr. Benson is an American Society for Engineering Education (ASEE) Fellow, a member of the European Society for

Engineering Education (SEFI), American Educational Research Association (AERA) and Tau Beta Pi, and the 2018 recipient of the Clemson University Class of '39 Award for Faculty Excellence. She earned a B.S. in Bioengineering (1978) from the University of Vermont, and M.S. (1986) and Ph.D. (2002) in Bioengineering from Clemson University.

Building a Community of Mentors in Engineering Education Research Through Peer Review Training

Abstract

This paper describes the Engineering Education Research (EER) Peer Review Training (PERT) project, which is designed to develop EER scholars' peer review skills through mentored reviewing experiences. Supported by the National Science Foundation, the overall programmatic goals of the PERT project are to establish and evaluate a mentored reviewer program for 1) EER journal manuscripts and 2) EER grant proposals. Concurrently, the project seeks to explore how EER scholars develop schema for evaluating EER scholarship, whether these schema are shared in the community, and how schema influence recommendations made to journal editors during the peer review process. To accomplish these goals, the PERT project leveraged the previously established *Journal of Engineering Education (JEE)* Mentored Reviewer Program, where two researchers with little reviewing experience are paired with an experienced mentor to complete three manuscript reviews collaboratively. In this paper we report on focus group and exit survey findings from the *JEE* Mentored Reviewer Program and discuss revisions to the program in response to those findings.

Introduction

Peer review of scholarship is critical to the advancement of knowledge in a scholarly discipline. Academia relies heavily on peer review, with nearly every facet of academic work evaluated, at least in part, by peer review. Indeed, publishing manuscripts, promotion and hiring, grant funding, awards, and in some cases, teaching evaluations rely on peer review [1]. Given its ubiquity in evaluations, peer review has large and wide-ranging implications for research and academic communities. In research, peer review determines what is shared with the larger community through publication and even what projects are conducted in the first place through distribution of grant funding. In academic communities, peer review determines who holds academic positions (and trains future researchers) and the inclusivity of a field as it welcomes new scholars, ideas, and methods. Collectively, peer review shapes academic disciplines and defines community values. Despite the enormity of these implications, scholars receive little or no training in effective and constructive peer review.

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 [2]. 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) [3].

There have been calls for peer review to move from a process of gatekeeping to a process of enabling and mentoring [4, 5]. In addition to advancing scholarship through inclusivity, improving the peer review system could also have important implications for advancing scholarship by providing professional development for researchers and growing their knowledge and skills through the review process.

Background and Purpose

As a relatively new and interdisciplinary field [6], EER benefits from diverse disciplinary backgrounds and knowledge of scholars, and as such relies on peer review of scholarship to generate, interpret, and translate knowledge from diverse perspectives. Supported by funding through the National Science Foundation, the PERT project is developing, implementing, and assessing programs that provide mentored training and experience in EER peer review for journal articles and grant proposals. The PERT project seeks to develop peer review training for EER scholars, building on a mentoring structure established within the *JEE* Mentored Reviewer Program [7]. It also includes a research component that is exploring how individuals develop mental models as part of the review process. The focus of the project is on framing the peer review process around mentoring and building up the EER community, and helping individuals develop peer reviewing skills not only to become peer reviewers but also to become better scholars.

Through our project evaluation and research activities, we seek to answer the following questions:

- How do scholars develop schema for quality EER through collaboratively constructing peer reviews?
- How do reviewing skills in EER improve research skills?

The current focus of the project is to investigate the above research questions and also study the professional impact of the program for scholars and improve the program to support scalability and future offerings.

JEE Mentored Reviewer Program

The structure of the *JEE* Mentored Reviewer Program [8] is to pair mentees, selected through an application process, with experienced mentors. The program orientation session provides opportunities for participants to network with other program participants and the project team. Following the orientation, participants work in triads (two mentees and one mentor) to collaboratively prepare reviews of three manuscripts submitted to *JEE* (Fig. 1). Participants individually drafted reviews using a Structured Peer Review (SPR) form that prompts them to identify strengths, weaknesses, and suggestions for improvement; make a recommendation to the editor (accept, minor revision, major revision or reject); and justify that recommendation [8]. Mentees and mentors are supported in the program by coaches, experienced reviewers who guide the triads through the program and provide feedback to the project team on the triads' progress. Participation in the program is about six months in duration.
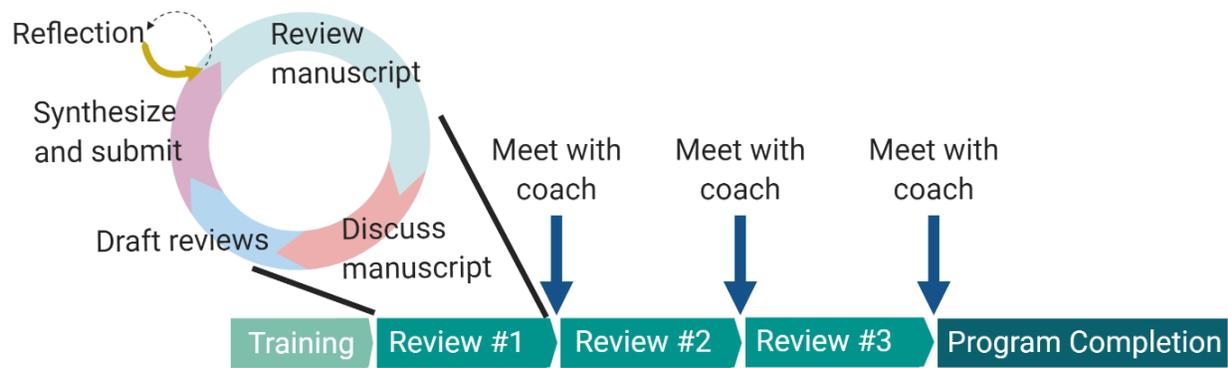
Figure 1. Overview of the PERT mentored reviewing structure and activities [8].

Since its inception, four cohorts have completed or are in the process of completing the *JEE* Mentored Reviewer program. The program has drawn broad interest in the EER community, with over 200 applications from 20 countries. In the first year of the project, two cohorts participated in the *JEE* Mentored Reviewer Program. Across the two cohorts, 42 mentees have collaborated with 18 mentors and three coaches, with some mentors and coaches participating in both cohorts.

Program Evaluation

The EER PERT project evaluation plan was designed to assess the project's progress meeting stated objectives, the value of the program for mentees and mentors, the contribution of the program to connecting participants to the EER community, and the impact of the program on perceptions of inclusivity in EER. For the first two cohorts of the *JEE* Mentored Reviewer Program, evaluation was conducted primarily through exit surveys with closed- and open-ended questions. Findings from these first rounds of program evaluation indicated positive effects on participants in terms of their confidence in their reviewing skills and in conducting EER [8]. Skills that participants reported included improving framing arguments in research and presenting research data and findings. Participants also reported growth in their connections to the EER community, describing how the program helped them meet new colleagues and become more familiar with tools and approaches within EER. Project evaluation activities for the Spring 2021 cohort of the *JEE* Mentored Reviewer Program included focus groups and exit surveys with both mentees and mentors. Institutional Review Board approval was obtained before data collection began.

Focus Groups
Two focus groups were conducted on Zoom in June and July 2021. Each focus group lasted approximately one hour and was led by three facilitators. A total of five mentees and three mentors participated. Facilitators used guiding prompts (Table 1) for the discussion. Focus groups were recorded and transcribed verbatim.

Table 1. Focus Group Discussion Prompts.

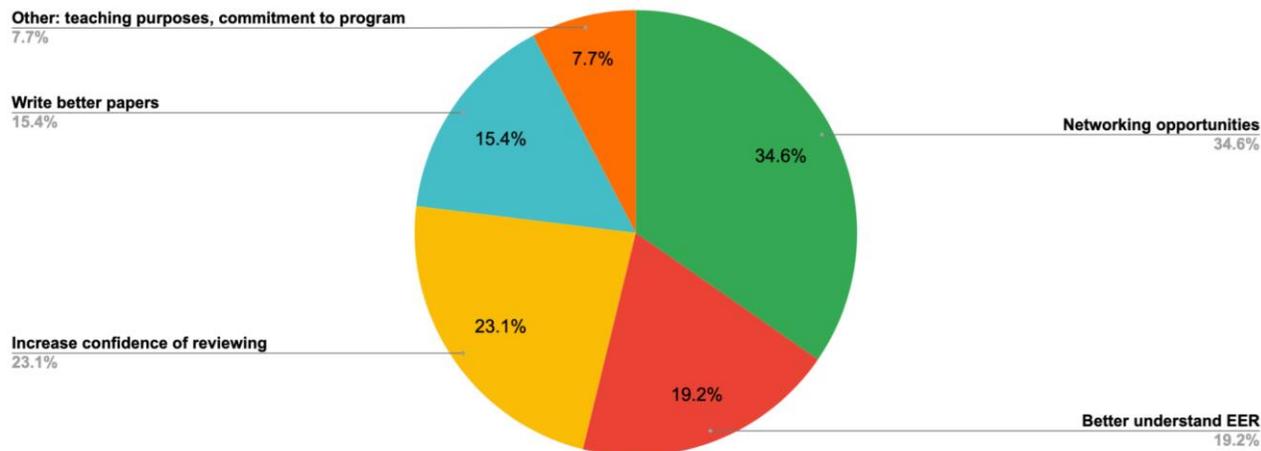| Topic	Prompt	Follow-up Questions
Program Expectations	Did the EER PERT program progress as you expected? Please explain.	What were your expectations entering the program? Were there any unexpected challenges?
Program Value	Do you value your EER PERT experience and the program overall? Please explain.	What could have improved your experience? What could have improved the experience for the other members of your triad? Has the program supported your professional development? What suggestions do you have for changes or improvements to the program?
Community Development	To what extent, if any, has participation in PERT made you feel connected to an EER community? Please explain.	Has the program helped you connect with other members of the community?
Inclusivity in EER	To what extent, if at all, has PERT altered your perception of the inclusivity of EER? Please explain.	Has the program changed your perception of inclusivity specifically related to peer review in EER?

Exit Survey

Exit surveys were distributed to Spring 2021 program participants (mentees and mentors) to collect feedback on the program as well as how the program contributed to the professional development of the participants. Surveys distributed to mentees and mentors included questions about program expectations, impact, and recommendations for improvement. The exit survey response rates for mentees and mentors was 100% and 89%, respectively.

Results

The main findings from the Spring 2021 cohort focus groups and exit survey fell within the following themes: 1) the program provided valuable training and increased participants' confidence in reviewing and conducting EER scholarship, 2) the program fostered a sense of community and inclusion, particularly for those without EER backgrounds and from outside the US, and 3) program logistics and communication created challenges for participants, including working across time zones and tracking triad progress.

Professional Development

Mentees and mentors emphasized in both focus groups and exit surveys that they found the program to be very valuable for their professional development. Mentees and mentors both reported that the program increased their reviewing, writing, and research skills. Mentees and mentors also indicated that the program supported the development of their mentorship skills. Participants indicated that their expectations for participating in the *JEE* Mentored Reviewer Program included not only improving reviewing skills and increasing confidence in reviewing, but also networking, increasing understanding of EER, and improving writing skills (Fig. 2).

Other: teaching purposes, commitment to program
7.7%

Write better papers
15.4%

Increase confidence of reviewing
23.1%

7.7%

15.4%

23.1%

34.6%

19.2%

Networking opportunities
34.6%

Better understand EER
19.2%

Figure 2. Mentee expectations for participating in the *JEE* Mentored Reviewer Program.

Reviewing

The majority of mentees who completed the program indicated that the program improved their reviewing skills to a "great extent" (83.3%) or "moderately" (16.7%) (Fig. 3A). Despite their previous experience reviewing EER manuscripts, mentors also indicated that the program improved their reviewing skills, with 71.4% indicating that their reviewing skills were improved to a "great extent" (Fig. 3B). Most mentees also indicated that the program increased their understanding of the EER review process and confidence in conducting EER reviews. One mentor reflected on the benefit of working with mentees who bring different perspectives on reviews:

> *You don't have to be an expert in the field to be able to provide a useful and constructive review. In fact, in some cases, being an "outsider" gives you a different perspective of things and reflects how the wider audience may interact with a specific piece of research.*

While the program was initially designed to leverage mentors' expertise and experience to develop mentees' reviewing skills, our evaluation demonstrated that both mentors and mentees derived valuable insights about conducting peer reviews in working collaboratively in their triads.
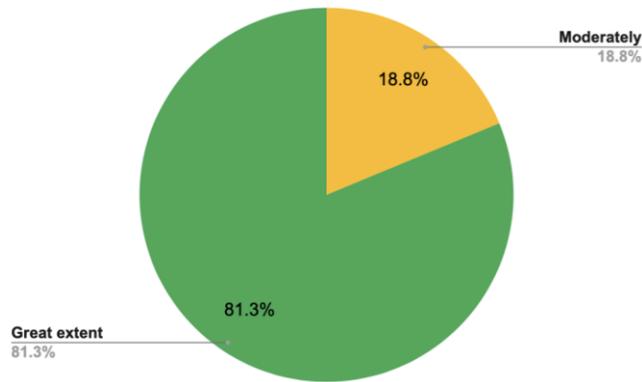
A   **B**
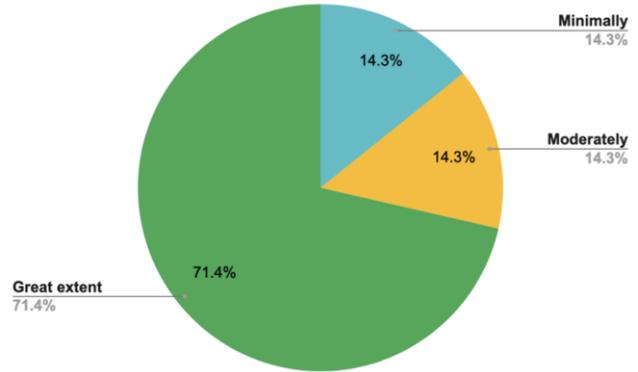
Figure 3. Program participation self-reported impact on reviewing skills. Mentee responses are shown in (A) and mentor responses in (B).

Focus group participants also indicated that the program helped them develop a schema and structure for reviewing. Several participants commented that the SPR forms were very helpful in constructing a review. Described by one participant:

> *I really liked the SPR activities, because they forced me to think about not just listing all of the things that need improvement with a paper, but also thinking about what are the real strengths of this paper, and I think that benefits authors in terms of them feeling a little bit nicer about the review that you're putting forward. But I think it's also helped me as a researcher, because it has really helped me think more clearly about what it is that makes a good manuscript.*

Importantly, this participant shares that the SPR prompted them to share manuscript strengths instead of solely focusing on weaknesses in a review, which not only is beneficial in supporting authors, but also contributes to developing a schema for what constitutes a "good" manuscript.

Research and Writing Skills
The majority of mentees and mentors agreed the program improved their research skills (Fig. 4). All seven mentors who responded to the exit survey reported that they believed there is a connection between peer review skills and ability to conduct research. One mentor shared:

> *Being able to "see" how people tell their stories and to be able to help people think through potential challenges with constructing their stories helps me think about the things I need to be attentive to when I do research and vice versa.*

Nearly all mentees (14/17) agreed that there is a connection between peer review skills and research. One mentee shared:

> *It [developing peer review skills] really helped me see the connections made in the papers between literature gaps, theoretical framework, and methods. I had been lacking this strong connection in my writing previously.*

The remaining three mentees indicated that they were unsure of a connection between peer review skills and research. For example: "*I would imagine there is a connection, but it's hard to say whether improving my peer reviewing skills has improved my ability to do EER research.*"

The program enhanced participant confidence in EER (research, writing, reviewing, and advising students) and submitting research articles to *JEE* as indicated on the mentee exit survey. All mentees (100%) agreed that the program increased their confidence to write EER reviews moderately or to a great extent (Fig. 4A). Notably, while the majority of mentee participants indicated that their confidence to submit their own scholarship to *JEE* increased due to the program, 16.7% indicated that they did not feel increased confidence to submit to *JEE* (Fig. 4B).

One focus group participant shared that they felt more confident in engaging with more experienced colleagues in EER after participating in the program: "*I feel more confident now to engage with colleagues that are more experienced than I am in certain areas and contribute to a group discussion.*"

A   **B**
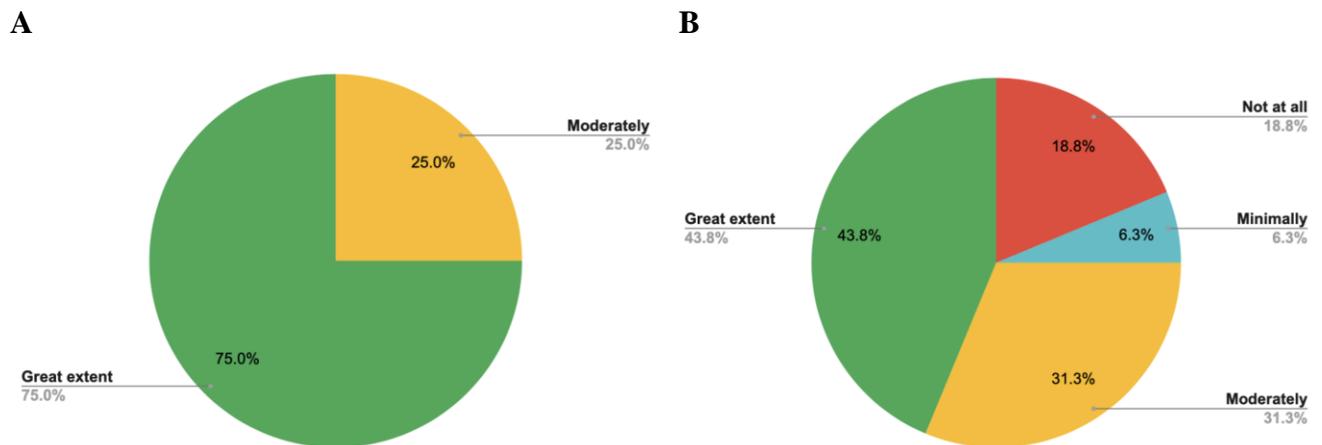
Figure 4. Program mentees reported increased confidence in EER reviewing (A) and submitting manuscripts to *JEE* (B).

Seventy-two percent of participants reported that the program *moderately* or *greatly* improved their own research and writing (Fig. 5)

A   **B**
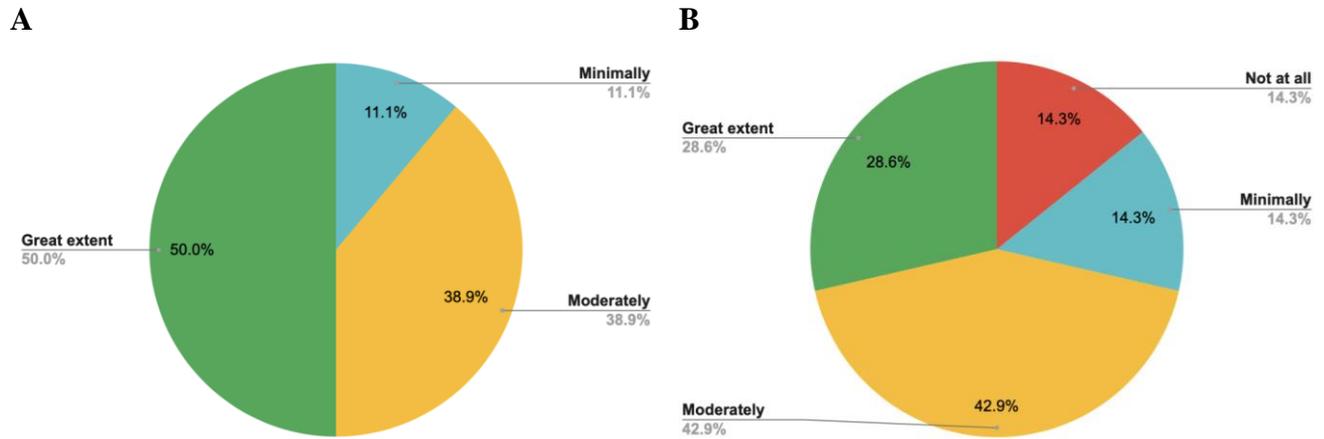
Figure 5. Program participant self-reported impact on research skills. Mentee responses are shown in (A) and mentor responses in (B).

In addition to developing their reviewing and research skills, participants also indicated that the program improved their writing skills. One participant shared that their increased writing skills were also identified by their supervisor, sharing: "*[My] supervisors commented on the fact that my writing has gotten better.*"

Mentoring
One notable aspect of professional development that participants shared was how the program supported their growth as mentors with their trainees. One participant described implementing processes learned in the program in working with graduate students:

> *I think the biggest value to me has been the transferability of the skill set. Because like up [to] now, when I'm working with my PhD students, I take them through the same process when they're asked to review a conference paper or I'll coach them through a journal manuscript. Through this program, I've developed a very good process for scaffolding that understanding and so I've been able to kind of expand the impact of that.*

Both mentees and mentors expressed that the program provided them with experience and tools to leverage in mentoring outside of the program. Participants further explained that the resources provided by the program, including the SPR form and resources on reviewing shared publicly on the project website, were useful in working with their trainees.

All mentors who responded to the exit survey responded that the interactions with their mentees were professionally rewarding (4.0/4.0, "to a great extent") and that the time they spent participating in the program was valuable (3.6/4.0, "moderately" - "to a great extent"). Additionally, all mentors agreed that the program improved their mentoring skills moderately or to a great extent.

Community and Inclusion
An important theme across the focus groups was the contribution of the program to providing a professional community for EER scholars and supporting inclusion in EER as a discipline. This

was particularly salient for participants coming from non-EER backgrounds. Further, the diversity of participants by country was also noted as a strength of the program in developing professional networks. As described by one participant: "*[The JEE Mentored Reviewer Program] does increase my sense of connection, not just with the education community, but with the sort of a more geographically diverse aspect of that community.*"

This engagement of participants from across many countries and disciplines further expanded participants' perspectives on EER research. As described by one participant, this increased familiarity with the community and *JEE* as a journal lessened perceived barriers of submitting work to *JEE*:

> *I know prior to the program I was very intimidated to submit anything to JEE just because I kind of knew the reputation, but didn't really understand much beyond that. So I think it's kind of been welcoming in the aspect of just being able to better understand kind of what's expected and what kind of work is welcome in* JEE.

Mentees were asked on the exit survey how connected they felt to the EER community before and after the program. On average, mentees reported an increase in connection with the EER community after the program (*Mean, pre* = 2.42, *Mean, post* = 3.58), further quantifying increased feelings of community (Fig. 6). This increase in EER community connectedness is comparable to data collected from a previous cohort [8].
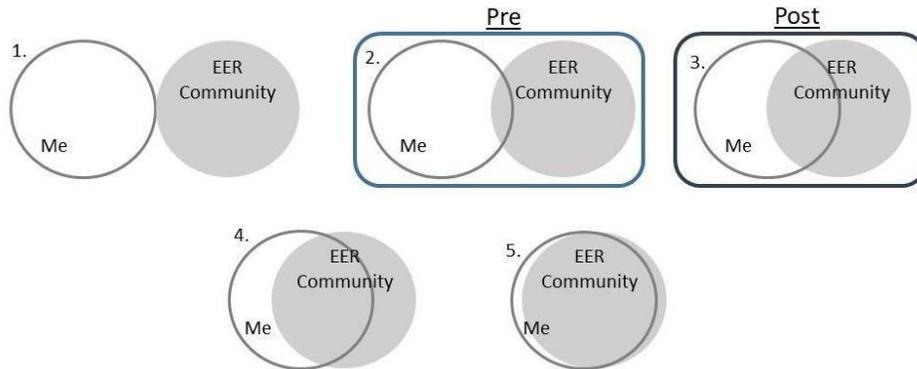
Figure 6. Results of mentees' sense of connectedness to the EER community based on application (pre) and exit survey (post) data. Mentee participants rated their sense of connectedness by selecting the image that best described their role in the EER community on application (pre) and exit survey (post). (Mean value pre = 2.42 out of 5; mean value post = 3.58 out of 5, where 5 = very connected and 1 = not at all connected).

In addition to supporting their development as part of the professional community in EER, focus group participants further indicated the program impacted their view of EER as a discipline, sharing that the program supported existing perceptions of EER as an inclusive academic community or initiating these perceptions. Several participants, particularly those from non-EER backgrounds and those participating from outside the United States, shared that their acceptance

into the program was a signal of inclusivity in EER and demonstrated that the program valued their perspectives. For example, one participant shared that prior to the program they would not have considered themselves as an EER scholar nor submit to EER journals, and that participation in the program prompted them to expand their research in EER. Participants appreciated *JEE*'s focus on inclusivity and constructive language that was reiterated not only through journal review criteria but also in the orientation and guidance from mentors and coaches. One participant shared that the transparency of the journal review process contributed to inclusivity. Overall, participants indicated that the *JEE* Mentored Reviewer Program promoted inclusivity in EER as a discipline.

While building community was frequently noted as a strength of the program, both mentees and mentors provided suggestions for increasing community through the program further. For example, one mentor shared in the exit survey: "*It would be nice to cross match triads or something so that my mentees would get the chance to engage with other people in the program.*"

One mentee indicated that they did not feel more connected to the EER community, since their interactions in the program were limited to the triad: "*Since I really only interacted with two other people in the program, I don't feel any more connected to the community as a whole.*"

In addition to suggesting opportunities for triad groups to connect, other participants suggested additional program-wide training or discussions after the orientation, as well as a culminating event at the conclusion of the program.

Program Coordination and Communication
Participants shared that while they found the program components valuable, it was often challenging to keep track of next steps. Since triads review manuscripts submitted to *JEE* for publication and manuscript assignments are made by the editorial board to match team expertise, there is variability in time between manuscript assignments. Keeping track of program steps became more challenging for teams when there were long periods of time in between manuscript assignments, which also contributed to teams losing momentum or feeling disconnected from the program. Mentors and mentees expressed confusion about when to submit update forms to indicate manuscript assignments were accepted or completed. This further contributed to longer wait times for some teams between manuscript assignments due to the editorial board not assigning additional manuscripts given unknown or inaccurate team status. Multiple focus group participants shared that a comprehensive and central checklist would benefit coordination amongst team members and help keep teams on track in the program. For example: "*Having all those things [SPRs, update forms, surveys] I think in one place might help initially as a checklist, perhaps, 'Before you meet next time make sure you have completed the steps' as a reminder.*"

Some participants shared that they often forgot whether they had submitted a team update, which contributed to confusion when they received reminders from coaches. Additionally, some participants noted that the lack of due dates or timelines for forms (excluding the manuscript reviews) caused some program tasks to be deprioritized and potentially forgotten. One mentee noted on the exit survey:

> *I would appreciate if these actionable items from start to end of the mentorship program were itemized in a tabular form with all the details (links, dates-timelines, person-in-charge, etc.). Then this table can just be updated as circumstances change. Through this, it might be easier to see the whole program as it progresses.*

While some participants indicated that the program website with organized forms, links, and directions was helpful, others felt that a visualized workflow that showed the team's progress would be most beneficial. Additional time barriers shared by focus group participants were challenges of scheduling team meetings across time zones, short (three week) review windows requested by the journal, and more access to mentors.

Program Revisions

Based on the program evaluation, two main changes were implemented for the second cohort, including 1) a program dashboard for teams to track progress and organize update form submissions and 2) optional monthly discussion meetings to supplement initial program orientation and triad meetings. In this section, we describe each of these program revisions that were implemented beginning with the Spring 2022 offering of the *JEE* Mentored Reviewer Program.

Program Dashboard
A commonly reported challenge among participants, based on their feedback regarding program organization, was the lack of centrality for the forms, difficulty finding them, and lack of clarity on how/when to use them. To streamline this process for both the project team and participants, we piloted the Triad Status Tracker (Fig. 7), which is a dashboard summarizing output from update forms and providing links to the forms. By organizing the data that participants submit in real time and displaying their progression through the program, the triads, associate editors, and project team are able to better coordinate and monitor participants' experiences in the program.
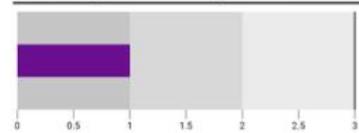
Figure 7. Example Triad Status Tracker dashboard showing (from the top left, clockwise) a triad's status (availability for reviewing a manuscript and which triad member should be assigned the next manuscript), progress through the process of reviewing three manuscripts, To-Do List (reminder of steps to complete), links to forms, contact information for triad members, and completion of Triad Feedback and SPR forms.

Community Monthly Discussions

Monthly discussions provide additional training in peer review topics while promoting networking opportunities and developing connections to others in the EER community. Discussions are led by *JEE* Editorial Board members and PERT coaches. Discussion topics and session descriptions are listed in Table 2. All past and current program participants are invited and encouraged to participate in the monthly discussions.

At the time of this writing, we have conducted four monthly discussions that were each offered in two sessions to accommodate varied schedules and the 20 time zones in which participants live. For example, the first monthly discussion topic was "Updated *JEE* Review Criteria," and approximately 30 past or current participants attended one of the two sessions. Break out room discussions helped participants make observations about aspects of the review criteria with which they were not familiar and clarify how to interpret some of the updated criteria when reviewing *JEE* manuscripts. Some participants noted the new guidance in terms of bias-free language and the expansion of the types of studies that are appropriate for *JEE*.

Table 2. *JEE* Mentored Reviewer Program Monthly Discussion Topics.

Topic	Description
Updated *JEE* Review Criteria	Led by *JEE* Editorial Board members, the revised *JEE* Review Criteria are presented and discussed in small groups.
Navigating the EER Community	Discussion of opportunities to get involved in the EER community, including service, conferences, professional development and networking events.
Inclusive Language in Peer Review	Discussion about how reviewers can use inclusive language in their reviews and suggest inclusive language to authors in their manuscript reviews.
Anti-Racism in Peer Review	Participants will learn about identifying racist themes and language in manuscripts and reflection questions to incorporate antiracism in the peer review process.
Journal club: Review of reviews	Participants in this session will read a short manuscript and associated reviews and discuss the strengths and weaknesses of the reviews in small groups.
JEE Editorial Board Processes	Led by *JEE* Editorial Board members, roles and "behind the scenes" processes of the journal will be discussed to promote transparency and answer questions about policies and procedures.

Conclusion

Despite the ubiquity and impact of peer review in an academic discipline, scholars traditionally are not provided training in effective and constructive review. Our evaluation of the third cohort (Spring 2021) indicated that the program provided valuable professional development for both mentees and mentors. Further, participants indicated that the program supported community and inclusion in EER as a discipline. In response to the evaluation, program organizers developed dashboards that track triads' progress in the program and implemented monthly discussions on topics related to EER peer review. Encouraged by the response and value reported by mentees and mentors in this program, the PERT project team plans to continue providing and improving the program and to scale it across other EER journals. Finally, the findings will be leveraged to offer a mentored grant proposal review program in Spring 2022.

Those interested in participating in a *JEE* Mentored Reviewer Program cohort can visit https://sites.google.com/view/jee-mentored-reviewers/home to find application dates. Journal editors interested in working with organizers to scale the program should contact the authors for more information.

Acknowledgements

References

[1] Hojat, M., Gonnella, J. S., & Caelleigh, A. S. (2003). Impartial judgment by the "gatekeepers" of science: fallibility and accountability in the peer review process. Advances in Health Sciences Education, 8(1), 75-96.

[2] A. E. Carroll, "Peer Review: The Worst Way to Judge Research, Except for All the Others." NY Times, November 6, 2018. Retrieved from https://nyti.ms/2yRcClr.

[3] N. J. Silbiger & A. D. Stubler, "Unprofessional peer reviews disproportionately harm underrepresented groups in STEM." *PeerJ*, *7*:e8247. 2019. https://doi.org/10.7717/peerj.8247

[4] L. Benson, "Reflecting, Rebooting, Reviewing," *Journal of Engineering Education*, vol. 108, no. 3, p. 311 - 312. 2019. https://doi.org/10.1002/jee.20288

[5] J. Martin, "Time for a Culture Change-Moving from Destructive to Constructive Feedback. *Journal of Women and Minorities in Science and Engineering*, *26*(1). 2020. https://doi.org/10.1615/JWomenMinorScienEng.2020033945

[6] B. K. Jesiek, L. K. Newswander & M. Borrego, "Engineering education research: Discipline, community, or field?" *Journal of Engineering Education*, 98(1), 39-52. 2009. https://doi.org/10.1002/j.2168-9830.2009.tb01004.x

[7] K. Jensen, I. Direito, M. Polmear, T. Hattingh and M. Klassen, "Peer review as developmental: Exploring the ripple effects of the *JEE* Mentored Reviewer Program." *Journal of Engineering Education*, 110: 15-18. 2021. https://doi.org/10.1002/jee.20376

[8] L. Benson, K. Watts, M. Ko, B. Albayati, R. Bates, K. Jensen and G. Lichtenstein, "Building Research Skills Through Being a Peer Reviewer." Paper presented at the 2021 Annual American Society of Engineering Education (ASEE) Conference and Exposition, Virtual Conference, July 26 - 29, 2021