

The Student Editorial Board of *Methods of Information in Medicine*

An Opportunity to Educate Tomorrow's Peer Reviewers

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Editorial

Summary

Objective: Peer review is a critical process in the publication of scientific findings; trainees and young investigators, however, have few opportunities to learn systematically how to review manuscripts. Journal editors have an opportunity to engage trainees and young investigators in the peer review process early during their career.

Methods: *Methods of Information in Medicine*, an official journal of the International Medical Informatics Association, is initiating a Student Editorial Board. The journal invites applications from international graduate and post-doctoral training programs that have a focus on health informatics, biomedical informatics, or a related field.

Results: Each year up to six trainees will be invited to join the Student Editorial Board. The trainees will go through a mentored training experience that includes an active involvement in the various aspects of peer review during their one to two-year term of appointment.

Conclusions: The journal expects that the Student Editorial Board will benefit trainees and young investigators in becoming skilled reviewers and engaged peers who can offer professional, constructive, and informative feedback and enhance the process of scientific communication.

Keywords

Education, medical informatics, peer review, periodicals

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Feedback is “the transmission of evaluative information about a process to the original source” [1]. Feedback governs many aspects of our lives and influences the education and professional development of investigators at all levels. When researchers communicate scientific information, one form of feedback is “peer review”. The term suggests that the feedback from peers incorporates a subjective, qualitative component that can vary considerably. Despite its subjective component peer review is a critical factor for climbing the professional achievement ladder and can have profound, sometimes career-influencing consequences on individuals' future choices and prospects.

The peer review process cannot be taken as a granted skill; it requires instruction, practice, and feedback. An unguided, self-educational, “learning-by-doing” approach without feedback is not ideal to educate future reviewers. A systematic curriculum that occurs early during one's career and concurrently with becoming a skilled author may better prepare future reviewers. Such a concurrent educational activity emphasizes the duality of being an author and a reviewer, as there is mutual benefit in having experience in either role [2]. However, few systematic approaches exist that allow researchers to acquire and improve their skills and knowledge as a reviewer [3]. Various feedback approaches provide instructional value, such as sharing other reviewers' comments (a practice adopted by many journals, including *Methods of Information in Medicine*), organizing educational sessions [4, 5], distributing primers and checklists [3, 6, 7], offering instructional material [5, 8], and providing feedback about the quality of a

review [9]. From our own experience as authors and reviewers we understand that learning how best to provide constructive, informative, and unbiased feedback is important, as high-quality reviews can add considerable value to the scientific communication process and help publications stand the test of time. When reflecting back, however, we all know that the initial learning experience was governed by digesting the feedback that we received in response to our own writings.

A recent article in *Nature* [10] emphasized the critical role mentors play in the education of young scientists and trainees, including the instruction on how to provide feedback. Although most efforts to educate trainees in the peer review process rely on mentors, trainees' exposure to peer review can vary as curricular time constraints and competing research activities from trainee and mentor exist. Most trainees and young scientists experience their first encounters with the peer review process in the role of an author. Non-acceptance of manuscripts is unfortunate, but occurs frequently, and is occasionally perceived as a personal rejection. If trainees understand the tasks and roles of authors, editors, and reviewers, they may be able to appreciate the feedback mechanism of peer review. In addition, they can recognize that the primary goal of the feedback is to assess the research and not the researcher. As trainees have limited exposure as authors, editors often do not know the trainees and their area of expertise [11]. Once the authors emerge from anonymity, the editors start inviting them to prepare reviews. However, many years before the editors become familiar with the author's expertise, trainees have already become knowledgeable and experienced in specific research domains. This represents an untapped potential and opportunity to involve trainees in the peer review process.

In response to this educational opportunity, *Methods of Information in Medicine* is launching a Student Editorial Board, joining efforts with the *Journal of the American Medical Informatics Association* [12]. As *Methods of Information in Medicine* is an official journal of the International Medical Informatics Association (IMIA), the Student Editorial Board is targeting interna-

tional trainees from health and biomedical informatics training programs. Members of the Student Editorial Board are enrolled in a graduate or post-graduate program. They are expected to demonstrate critical thinking, and have a good understanding of research design and biostatistics. Although English may not be the primary language, Student Editorial Board members are expected to have a high-level command of the English language. Initial experiences with scientific writing are desirable. The duration of the Student Editorial Board appointment is one year, and can be renewed for a second year by mutual agreement.

The primary objective of the Student Editorial Board is learning how to formulate constructive and insightful feedback that includes expressive and meaningful information for authors, editors, and the other peer reviewers of a submitted manuscript. The members of the Student Editorial Board will be exposed to a review curriculum and receive instructional material that will prepare them in more detail on how to craft written feedback. They will participate in the review of up to five manuscripts annually. Depending on the trainees' area of specialization the editors will assign members of the Student Editorial Board to manuscripts that are in alignment with their expertise. One of the editors will assess the trainees' review and provide feedback that may require revisions prior to returning them to the authors. Once acceptable, the trainees' review will be returned to the authors in addition to the assessments provided by members of the Editorial Board and external reviewers, while informing authors that a Student Editorial Board member was involved in one of the reviews. Depending on a manuscript's disposition, the member of the Student Editorial Board remains involved in subsequent manuscript revisions. The primary incentives for members of the Student Editorial Board include the educational experience in participating in the review process, the listing on the journal's masthead, the active participation in editorial board meetings, and the opportunity to share their expertise with editors and other journals. Preparing the reviews will not carry financial incentives as is common with the task of reviewing manuscript considered for publication.

We hope that the Student Editorial Board will provide trainees an opportunity to learn how they can contribute effectively to two core activities of "peer review", namely, crafting a review and being a peer. In the long term the experiences from the Student Editorial Board may provide valuable opportunities and insights about the potential of actively engaging trainees in the peer review process early in their careers.

References

1. Merriam-Webster Online Search (database on the Internet). © 2007 Merriam-Webster, Incorporated, USA (accessed: October 10, 2007). Available from: <http://www.webster.com>
2. Bourne PE, Korngreen A. Ten simple rules for reviewers. *PLoS Comput Biol* 2006; 2 (9): e110.
3. Provenzale JM, Stanley RJ. A systematic guide to reviewing a manuscript. *AJR Am J Roentgenol* 2005; 185 (4): 848-854.
4. Callaham ML, Schriger DL. Effect of structured workshop training on subsequent performance of journal peer reviewers. *Ann Emerg Med* 2002; 40 (3): 323-328.
5. Schroter S, Black N, Evans S, Carpenter J, Godlee F, Smith R. Effects of training on quality of peer review: randomised controlled trial. *BMJ* 2004; 328 (7441): 673.
6. Shea JA. Reviewer's Recommendation. *Acad Med* 2001; 76: 952-953.
7. Ammenwerth E, Wolff AC, Knaup P, Ulmer H, Skonetzki S, van Bommel JH, McCray AT, Haux R, Kulikowski C. Developing and evaluating criteria to help reviewers of biomedical informatics manuscripts. *J Am Med Inform Assoc* 2003; 10 (5): 512-514.
8. *BMJ British Medical Journal* (home page on the Internet). © 2007 BMJ Publishing Group Ltd (accessed: October 23, 2007). Available from: <http://resources.bmj.com/bmj/reviewers/training-materials>
9. Callaham ML, Knopp RK, Gallagher EJ. Effect of written feedback by editors on quality of reviews: two randomized trials. *JAMA* 2002; 287 (21): 2781-2783.
10. Lee A, Dennis C, Campbell P. Nature's guide for mentors. *Nature* 2007; 447 (7146): 791-797.
11. Pernetta AP. Mentors could support a student reviewer database. *Nature* 2007; 448 (7150): 129.
12. Johnson KB, Miller RA. The JAMIA Student Editorial Board: peer review education in biomedical informatics. *J Am Med Inform Assoc* 2004 ; 11 (1): 87-88.

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