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Is verification of peer review service necessary to support scientific growth?

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Peer review is the process of subjecting a manuscript or other scholarly work to scrutiny by peers who share subject matter expertise. Peer review is an essential component of research publishing, as expert peer reviewers help ensure the scientific integrity and value of a work. It is well documented that peer review is a time-consuming process, often taking several hours, and in some instances days for a reviewer to complete. Concomitantly, science is continually growing. Researchers who have investigated the growth rates of science have found the scientific literature doubles in size approximately every 10–15 years.¹ With growth comes an increase in journals and an increased need for peer reviewers. Many editors are already experiencing greater difficulty finding qualified individuals who will agree to provide a review and many have publically acknowledged this problem with their respective academic communities.^{2–4}

Unfortunately, addressing the reviewer shortage is complicated. For some time now, there appeared to be some semblance of informal consensus that peer review provides too few rewards. In an effort to rectify this concern, many editors now list the names of reviewers in each volume or issue. While a significant step forward, this gesture still fails to acknowledge the number of reviews completed, the amount of time invested, and the quality of one's review. Other publishers and editors have utilized a variety of strategies to incentivize peer review, such as offering reduced publication fees for authors, discounts on products, free access to subscription-based publications, continuing medical education (CME) credits, and outstanding reviewer awards. While each of these strategies have been shown to yield some success,⁵ it does not appear to be enough to fully solve the reviewer problem.

Recent research indicated peer reviewers spent more than 22

million hours reviewing manuscripts in 2013 alone.^{5,6} Further, another recent study examining reviewer statistics across 21 countries found approximately 10–20% of reviewers conducted approximately half of the reviews from their perspective countries.⁷ Thus, not only is the peer review process incredibly time-consuming, but the efforts also appear to be highly disproportionate among members of their respective research communities. In fact, approximately 20% of reviewers were responsible for reviewing 50% of the papers in biomedical fields and 60% of papers in non-biomedical fields.⁷

Certainly, there are numerous reasons for such differentiated performance. For example, perhaps an increasing number of researchers are overextending themselves with other responsibilities and peer review becomes a convenient task to abandon? Perhaps increased expectations of scholarship have resulted in more researchers growing so busy contributing to the literature that they no longer have time to consume and evaluate it? Perhaps some researchers feel jaded about the peer review process due to an unpleasant experience as an author and no longer wish to participate? In reality, there likely are many reasons why peer review efforts appear to wane. However, performing peer review remains a professional expectation of members from the research community.

For college and university faculty, service typically is a requirement of employment. Although service may come in a variety of forms, peer review often is one of the most common forms. Unfortunately, peer review often is difficult for reviewers to properly demonstrate and difficult for department chairs, deans and other evaluators to substantiate. For many evaluators discerning peer review activities largely has been an exercise in trust. Although faculty as a collective group generally are honest and collaborative, bibliometric evidence suggest there may be a small contingent of faculty that tend to overestimate their peer review service. Thus, it seems that, for the sake of scientific advancement, it is time for greater scrutiny of peer review service.

One very promising solution is a free and innovative online database named Publons. Founded in 2012, Publons was established to “address the static state of peer-reviewing practices in scholarly communication, with a view to encourage collaboration and speed up scientific development”.⁸ Publons operates under the notion that when reviewers are properly credited for their reviews,

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they will be more likely to accept an invitation to review, make peer review a priority, and provide a quality review. Publons provides peer reviewers and editors credit for their efforts by working with publishers to verify their activities. Ultimately, this results in a system in which peer review efforts can be both verified and measured. Peer reviewers also are encouraged to create a public profile demonstrating their efforts where analytics also are available to show how a reviewer fares relative to other reviewers across a number of academic disciplines. At the time of this writing Publons has more than 200,000 registered peer reviewers,⁷ a figure that likely will only continue to grow.

Additionally, more than 20,000 journals have also signed on with Publons as a way to acknowledge reviewers' efforts and many more are certain to follow.⁹ One particularly interesting feature of Publons is that top reviewers are highlighted on the website for further public recognition. This feature likely will appeal to reviewers with a competitive spirit, and many will find the rankings a fun way to engage with institutional/departmental colleagues. Further, department chairs and other evaluators will be able to verify the actual peer review service commitment of a given faculty member. The *American Journal of Surgery* was a relatively early adopter of Publons and at the time of this writing has approximately 50 peer reviews credited.¹⁰ Readers of this article are encouraged to join Publons, document their peer review efforts, and join others in celebrating the tedious and time-consuming, but

critically important service of peer review.

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