Publications

This message is being written at a time when there are some increasingly vexing issues facing our Society with respect to publications. Our publication systems (editorial boards, reviewers, systems such as PaperPlaza and IEEE *Xplore*, IEEE publications staff) serve multiple roles, including dissemination of new results, quality control, and archiving of important results. Peer-reviewed publications have formed the backbone of research in science, engineering, and mathematics for centuries. It seems to be a very effective system, so what are the problems?

VOLUME

The "volume" issue relates not just to the number of papers but also the number of journals and therefore the number of reviews required. Of course if publication rates were down, while the number of researchers was on the increase, it would be hard to view that as a good sign. But the rate of growth places considerable strain on the system, the editorial boards of conferences and journals continue to voice concerns about the number, quality, and timeliness of reviews they are able to obtain. It also raises difficulties for researchers in keeping up to date. Thankfully, the tools for searching and keeping track of new results are very good. However they are not perfect, and the risk of missing something important therefore increases.

Volume is an unfortunate side effect of a research community that continues to value scientific excellence but wishes to have simple, numerical mechanisms for evaluating such excellence. At times

you could be tempted to think that some retired sports commentator or sports statistician has taken control of academia and turned it into a game of getting the highest "average." (Is that paper count? Citation count? H index? Impact factor? Eigenfactor?) Of course, I know the value of these metrics, and I do use them myself. I also know that even though they are useful as broad indicators, they can be subject to noise, bias, and other distortions. However, once paper count is part of the game that funding agencies and promotion committees play, it is completely natural that researchers feel pressure to publish.

In my view, therefore, increased volume is here to stay, but the question is how do we respond to this? As a Society, we continue to have a large number of editors and associate editors who work hard to maintain the quality of our publications and will continue to do so. Thankfully we have some good tools (such as PaperPlaza and Manuscript Central), and these help reduce the load significantly. I recall my first time as an associate editor for *IEEE Transactions on Automatic Control* in the early

1990s. At that time, everything was paper copy, papers submitted, requests for reviews—we had huge filing cabinets of documents. Now we have large, backed up servers/disk drives to make this task easier. We will continue to use and develop these tools, but the most important part of the editorial process remains the people: editors, associate editors, and reviewers. I would ask all of our readers and Society members to continue to play their part in maintaining a high quality review process.

E-PRINT

Another recent direction that has arisen is in relation to "e-print" servers, that is, fast-turnaround, typically zero-review, publication sites. Discussion of this is covered in Frank Doyle's column in this issue, which includes a report by Roberto Tempo and John Baillieul on the December 2010 special panel session on e-print servers.

PLAGIARISM AND SIMULTANEOUS SUBMISSION

In the case of electronic paper servers, we accept that such versions

Attendees from the IEEE Control Systems Society Outreach Workshop held on November 11, 2010 at the University of California, Irvine.

exist and may have substantial if not complete overlap. However, at the opposite end of the spectrum, we are seeing an increase in cases of plagiarism and simultaneous submission. Plagiarism (presentation of another's ideas and work as your own) is of course regarded as highly unethical. Simultaneous submission is sometimes called self-plagiarism. However, as noted by the *IEEE Control Systems Magazine* editor-in-chief in the June 2010 editorial, the term self-plagiarism is poorly chosen since it does not entail intellectual theft in the sense that plagiarism does. Therefore, simultaneous submission seems less serious.

To me, the problem with simultaneous submission, that is, submission of the same material to multiple publication sites, relates to two of the critical components of scientific publications: archival value and publication quality.

Mark and Lila Spong. Mark was program chair for the 49th CDC held on December 15–17, 2010 in Atlanta.

issue, although not at the same level of severity as plagiarism. Our conferences and journals contain statements clarifying these issues. For example, upon submission of a conference publication, the submitting author is required to accept that "… this submission represents original work that neither has appeared or has been accepted to appear elsewhere for pub-

> **If as an author you have any doubt about overlap/simultaneous submission, you should first check the editorial guidelines.**

Simultaneous submission undermines the archival value of a publication. It creates confusion and duplication in the original source of an idea or result. In terms of quality, simultaneous submission undermines the review process in a few ways. First, it increases the probability that in one of the submission cases, reviewers will miss some problem. Therefore, this is viewed as an unfair way of "gaming" the academic system and increasing the probability that lower quality submissions will be published. Second, it unnecessarily increases the net burden on and frustration levels of reviewers and editorial boards.

IEEE therefore views simultaneous submission as a serious ethical

lication, nor is simultaneously under review for another publication, in its current form….".

If as an author you have any doubt about overlap/simultaneous submission, you should first check the editorial guidelines. We do not include posting on a Web site (for example, a personal Web site, an institutional Web site, or an e-print server) as counting toward simultaneous submission, since these are unreviewed publications of the material. If closely related papers have been submitted for review, it is the author's obligation to cross reference any earlier closely related work. To be considered for publication, it needs to be clear that the additional publication adds value,

compared to any previously submitted, appeared, or work under consideration for publication as a refereed article. If you do believe it clearly adds value and is different from other works, it is essential to cross reference such work and explain to the editor the differences between the relevant works. In this case, all ethical requirements on the authors are satisfied, and it is up to the editorial board to make a judgment as to whether there is sufficient difference and added value.

In many academic institutions, plagiarism of submitted course assessment material is checked by automated software systems. These software systems can also be used as an aid in detecting plagiarism or simultaneous submission in submitted research articles. However, detection software is far from perfect and should not replace reviewers and editors being alert to possible abuses. The article by Fielder and Kaner, "Plagiarism Detection Services, How Well Do They Work?" (*IEEE Technology and Society Magazine*, DOI: 10.1109/ MTS.2010.939225) contains some interesting analyses and recommendations in this regard. Among other things, this article demonstrates some significant shortcomings in automated detection systems. So while these tools are useful, it would be imprudent to think that such automated systems can replace critical review to examine the novelty of a submission.

CLOSING THOUGHTS

As always, modern tools are indispensible aids in maintaining a high-quality scientific publication but are no replacement for high-quality, dedicated volunteers who help make our society run. Please continue with the irreplaceable input you provide to the IEEE Control Systems Society.

Rick Middleton