EDITORIAL

Criteria for Publication in The Plant Cell

A matter of great interest to authors and readers alike is what criteria are used by The Plant Cell to determine whether to publish a submitted research article. Having read hundreds of reviews and decision letters over the past year, I can say with some assurance that most reviewers believe, at least as firmly as our editorial board, that The Plant Cell should publish only those manuscripts that present fundamental advances perceived to be of wide interest to the plant biology community, not just to experts within a discipline, and that these manuscripts should present evidence that answers important questions with a high degree of certainty and clarity. Papers that offer encouraging progress toward such understanding, although important and interesting within a discipline, generally do not meet the standards insisted on by most reviewers. Similarly, quality manuscripts that describe a valuable resource or a new methodology, but which do not also provide substantial new insight into the biology of plants, do not meet reviewers’ expectations or the journal’s scope.

A less well understood aspect of the editorial process at The Plant Cell is the nature of the role that our editorial board plays. Our board members are referred to as coeditors to emphasize the fact that their role is relatively unique, being distinct from that of editorial board members at most other high impact journals that publish plant biology research. Each coeditor at The Plant Cell possesses expertise in one or more specific areas that far exceeds that of a professional editor, who often handles manuscripts across the full breadth of plant biology. The vision of our founding Editor-in-Chief, Bob Goldberg, was that The Plant Cell could make better decisions, and do so more consistently, than other high-impact journals by utilizing the expertise of first-rate working scientists, rather than by hiring professional editors to make the journal’s publication decisions.

Like any journal, we may occasionally publish research that members of the community consider to be below expected standards, or we may decline to publish research for which the significance is not properly appreciated. It must be our mission to strive to maintain both a high standard and a high level of consistency, and to do this better than any other high impact journal. In our editorial process, we believe coeditors play the key role in achieving this end because each decision is rooted in a high level of knowledge and expertise. Thus, we not only encourage, but require coeditors to apply their expertise to publication decisions, and not merely accept reviewers’ recommendations as the final input. Importantly, coeditors consult with each other on a regular basis to try to ensure the consistent application of standards that the community expects. In the final analysis, the journal’s high standards develop and evolve from the views and expectations of the entire plant biology community, interpreted and applied through the best efforts of the editorial board.

Another responsibility that we share with the entire plant biology community is to meet the highest ethical standards in publishing. To this end, the American Society of Plant Biologists has developed policy guidelines for what it considers to be ethical behavior, along with procedures for how to address allegations of ethical breaches. The society’s journals participated in the development of this policy and insist on full compliance by all authors, reviewers, and editors. To our concern, recent experience has shown that a few authors fail to acknowledge accepted standards of plagiarism or to understand that presentation of previously published results without proper attribution constitutes ethical misconduct. All authors are expected to read, understand, and fulfill the expectations laid out in the society’s ethics policy (www.aspb.org/publications/ethics.cfm). It is neither our intent nor role to be legalistic, but the community can be confident that all allegations of ethical misconduct are taken seriously and trigger fair, formal procedures for investigation and determination of sanctions, if any. Frivolous allegation is also considered to be a breach of ethics: any allegation should have a clear basis in fact.

In the area of experimental standards, a matter of extensive recent discussion in the biology community is what comprises proper standards for design and analysis of experiments involving transcript profiling, proteomics, and other large-scale approaches. The Plant Cell sets standards for such experiments that are the same as for any experiment: claims must be supported by evidence, and so wherever the data require statistical tests to be interpreted properly, these must be performed and reported. We recognize that many manuscripts published in the past may have not met this standard (as can also be said for probably all biology journals), but we commit henceforth to making certain, through our normal review and editorial process, that future manuscripts meet the high scientific standard that the plant biology community would expect us to uphold. To ensure that we meet your expectations, we have expanded our editorial board to add formal expertise in statistical genetics and genomics (Rebecca Doerge), as well as in protein structure (Joseph Noel) and molecular evolution (Brandon Gaut).

In evaluating transcript profiling experiments, we will consider whether there is a clear and complete description of each experiment; whether biological and/or technical replicates should have been used; what statistical analysis has been performed; whether a multiple comparison correction has been used to control the type I family-wise error rate, where necessary; and/or whether the need for statistical analysis to support the claims has been obviated through validation of claims by independent experiments. As noted in our
"Instructions for Authors," we strongly encourage authors to involve statisticians in both the design and analysis of experiments, to whatever extent is necessary, to properly interpret results. In addition, we will be amending our policy regarding the reporting of large data sets, in concert with Plant Physiology, beginning with the January 2005 issue, such that provision of complete data sets will be required, rather than only those elements that show statistically significant changes in an experiment. Full reporting will be required not only for transcript profiling experiments, but also for proteomic and metabolomic experiments, and regardless of the methodology used (e.g., equally to SAGE experiments as to microarray experiments). Authors will be required to deposit large data sets in an online public repository with open access according to accepted formats, if an appropriate repository is available. Examples of public repositories for transcript profiling data include the Gene Expression Omnibus (GEO; www.ncbi.nlm.nih.gov/geo) and ArrayExpress (www.ebi.ac.uk/arrayexpress).

Finally, I note with satisfaction the increasing appearance in The Plant Cell of research articles based on evolutionary approaches that offer important new insights into the biology of plants that we believe is of significant interest to the broad readership. This month we are privileged to present three such articles, which we have grouped at the top of the Research Articles listing in the Table of Contents.

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