

EDITORIAL

L&O Letters: Why we need a new journal for the aquatic sciences

It is a time of major change in scientific publishing. Technology and the web have transformed article submission (online only), processing (web-based manuscript processing systems), and discovery (search engines and social media). These developments have contributed to new norms including faster peer review and improved access to publications through online open-access journals and online journal archives of older material. Technology has also indirectly contributed to discussions of the sometimes contentious issues in publishing such as high costs, restricted access to new articles and other research products, calls for new models of peer review, and policies related to these issues. Consequently, both the supporting technology and policies of scientific publishing are likely to continue to evolve. However, technology and policies do not write and read papers—scientists do. Therefore, it is important to also reflect on other elements of publishing that are even more fundamental to scientists and yet have received far less recent attention, namely, the journal as a forum for communication *among* scientists.

One of the important reasons for launching a new journal is to fill a gap in communication among scientists. In the last 50 years, most new journals have been specialized journals that arise when a new discipline or subdiscipline reaches a critical mass. These specialized journals fill an important role promoting progress within a discipline and reflect the continuing trend of increasing specialization in science. However, today, scientists are also being asked to tackle problems and research agendas that are broad and often integrative, requiring greater communication among specialties. This disconnect between highly specialized disciplines and the need for more integrative and cross-disciplinary approaches and solutions is a reality for much of contemporary science. For the aquatic sciences, there are many compelling basic and applied research questions that require reaching across our disciplinary specialties to address in a more holistic and integrative manner. The physics, chemistry, and biology of freshwater and marine systems do not

operate independently, despite too-frequent attempts to study them as such. Therefore, aquatic scientists should strive to increase opportunities for further integration and cross-fertilization within the aquatic sciences.

The Association for the Sciences of Limnology and Oceanography (ASLO) is taking advantage of developments in publishing to fill these important gaps in our community by launching a new, online open-access journal, *Limnology & Oceanography Letters* (*L&O Letters*). *L&O Letters* will publish short-format original research articles, syntheses, and essay-type articles that are written broadly and clearly to foster cross-fertilization across our large and diverse community. Like ASLO and its other journals, it will be global in its reach and integrative across subdisciplines and habitats.

Vision

L&O Letters will publish articles that are useful to scientists in some meaningful way, and articles that advance our field in important ways—i.e., articles that are *memorable*. But, what makes an article memorable to you? I suspect that you, and most scientists, can pull from memory a handful of articles from years' and even decades' past—not only the “classics” that others have told you are important, but also ones that are meaningful to you in some unique way. Such memorable works will certainly differ for each scientist, but such works taken together likely have similar characteristics, such as a compelling idea that links to a problem you are passionate about, that changes how you see a problem, that gives you insight into a completely different problem through analogy, or for another reason that is difficult to articulate. It is also likely that these memorable papers are written in clear, simple, and broadly accessible language; they are based on a robust and often elegant foundation of strong evidence and thorough analysis; they have visuals that are succinct, informative, and often synthetic; and the authors clearly lay out the contribution of the work and how it fits within the broader scientific context. These are the articles that *L&O Letters* strives to publish using the strategies described below.

Strategies

ASLO journals are extremely successful and publish major papers in our field. ASLO's partnership with the scholarly

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publisher, Wiley, ensures that its journals will take full advantage of current and emerging developments in digital publishing, while meeting the needs of the aquatic science community as they evolve. Thus, this new journal will not vastly differ in its look and feel from existing ASLO journals, all of which were redesigned at the launch of the partnership with Wiley in 2015. For example, as with all ASLO journals, the most fundamental criteria for publication is that the research is robust and based on a solid foundation of strong evidence and thorough analysis. For *L&O Letters*, we have also implemented the following specific strategies to ASLO's familiar journal operations that are designed to meet our vision. First, *L&O Letters* encourages authors to target their writing to a broad audience of aquatic scientists and to write in clear and accessible language. Second, the writing style and short-format "Letter" article is designed to encourage scientists to read broadly outside of their specialty to learn the key findings across the aquatic sciences. The longer "Current Evidence" article is designed to succinctly synthesize what is known and not known about timely and important topics to identify key knowledge gaps and facilitate research across subdisciplines and boundaries. Third, visuals should be informative and synthetic that aid communication of results and conclusions. Finally, an essential element of the *L&O Letters'* article and peer-review process is the "Scientific Significance Statement" that explicitly states, in the authors' own words, the work's important contribution to the aquatic sciences and how it advances understanding. These strategies, along with specific author-centric procedures such as the use of templates, detailed guidelines for authors, and a simplified submission process, are designed to meet our specific vision for this journal while maintaining the high standards and scientific integrity established by ASLO's existing journals.

Looking to the future

How will we know if we achieve our vision for the journal? We do not have specific targets for journal and article metrics because numbers in the absence of context are meaningless. Nevertheless, because we need a mechanism to evaluate our progress toward meeting our vision, we will use

the following combination of metrics and feedback, imperfect though they are. First, to evaluate if articles are useful and memorable, we will track article-level metrics that show that the work is being shared and discussed on social media. Although such metrics do not always signify that the papers are cited or used, they are an indication of interest in the work compared to articles that get little to no attention—particularly when discussed among scientists, which are the interactions we are most interested in. Second, to evaluate articles that advance the field, we will use traditional article citation measures that show they are used in other published articles. Third, to evaluate how well *L&O Letters* articles are contributing to discussions and research across subspecialties, we will track the breadth of journals and disciplines that are citing *L&O Letters* articles. Finally, we will qualitatively evaluate all aspects of our vision by talking to readers and members of the community at conferences and other venues. Qualitative approaches are valuable in lending insight that numbers alone cannot convey. We will know we have succeeded if you tell us that you are finding memorable articles in *L&O Letters* and that they influence your science. And, some day, scientific publishing at large will do a much better job of quantitatively measuring an article's influence on scientific progress.

Please join me and our superb editorial board in building this journal by submitting, reviewing, and editing manuscripts for *L&O Letters*. This journal is by and for the aquatic science community—it will succeed to the degree that the aquatic community participates and contributes their important ideas. Consequently, I want to hear from you. Please contact me (soranno@anr.msu.edu) at any point and particularly before submitting a paper for feedback on scope, audience, and topic—especially early-career scientists. I look forward to working with you to achieve our vision of publishing memorable work that is integrative, compelling, and advances knowledge of freshwater and marine systems.

Patricia A. Soranno
Founding Editor-in-Chief,
East Lansing, Michigan, USA