

Beyond Open Access

by Mary Yess

“The future is already here, it’s just not very evenly distributed.”

—William Gibson



The models of scientific communication and publication—which have served us all so well for so long—are no longer fully meeting the spirit of the ECS mission, may not be financially viable, and are hurting the dissemination of the results of scientific research.

The future of Open Access (OA)¹ can change not only scholarly publishing, but can change the nature of scientific communication itself. OA has the power to more “evenly distribute” the advantages currently given to those who can easily access the outputs of scientific research.

ECS has long been concerned with facilitating that access, and our mission² has been to disseminate the content from within our technical domain, as broadly as possible, and with as few barriers as possible. To accomplish this, we have maintained a robust, high-quality, high-impact publishing program for over 100 years.

Several years ago, ECS started taking a serious look at the challenges facing us in fulfilling our mission, specifically with respect to our publishing program. The challenges—faced by others in publishing, to a greater or lesser degree—are many and have become increasingly severe:

- a longtime erosion of subscriptions revenue and of subscribers;
- competition from (primarily) commercial publishers that game the impact factor system, and impose “big deal” packages of subscriptions on libraries;
- reduced library budgets that at first severely affected book budgets and now seriously affect serials budgets;
- increasing costs of online publishing;³
- consolidation in the publishing industry, leading to the extinction of small publishers; and

- the lure of profits to be made, resulting in more competing journals being launched with greater frequency, both by reputable publishers and start-ups only in it for the money (the latter often referred to as “predatory” publishers).⁴

When a commercial scientific publisher is taking a 35% net profit out of the system,⁵ compared with under 2% by ECS, something is not only wrong, but it is clear that some publishers will do anything and everything they can to keep maintaining that level of profit. For many, journal publishing has indeed become a business.

Adding to Researcher Responsibilities

While open access is still a very low priority for many authors,⁶ especially within the technical areas covered by ECS, mandated OA publishing requirements are quickly taking hold and being implemented.

The “Finch Report” in 2012 set UK on its way to mandated OA.⁷ In the U.S., OA finally gained some traction in March 2013 when the U.S. Office on Science & Technology Policy (OSTP) announced

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that U.S. government agencies with budgets of \$100m+ must develop plans to make available to the public publications reporting federally funded research.⁸ The Department of Energy became the first agency to announce a policy in this regard.⁹

Many academic institutions have established policies in support of disseminating the fruits of their research and scholarship as widely as possible, through different mechanisms, but most often by requiring faculty to deposit their work in the institution's repository. For example, the Massachusetts Institute of Technology (MIT) has a policy¹⁰ where each faculty member grants to MIT nonexclusive permission to make available his or her scholarly articles and to exercise the copyright in those articles for the purpose of open dissemination. The faculty member makes available an electronic copy of the final version of the manuscript to a designated representative at MIT. That office then makes the scholarly article available to the public in an open-access repository. (To learn if your institution has a mandatory archiving policy, visit the ROARMAP site.¹¹)

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“Free the Science™”: to provide all ECS content at no cost to anyone—no fees for authors, readers, and libraries.

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The landscape of OA mandates is becoming increasingly complex: with much research now being done across multiple institutions and multiple countries, authors will be subject to multiple mandates—from funding agencies and from their home institutions—creating an increased administrative burden for researchers. CHORUS (Clearinghouse for the Open Research of the United States)¹² and SHARE¹³ are two efforts currently underway to make compliance easier.

CHORUS is a suite of services that provides a solution for agencies and publishers to deliver public access to published articles reporting on funded research in the United States. This nonprofit leverages widely-used technology to facilitate the compliance process. (Scaling for international needs is being discussed, but is not a main focus of the organization.)

The Shared Access Research Ecosystem (SHARE) is a higher education and research community initiative to ensure the preservation of, access to, and reuse of research outputs. SHARE will develop solutions take advantage of the interest shared by researchers, libraries, universities, funding agencies, and other key stakeholders to disseminate research.

ECS's Open Access Goals

For many societies, the ever-increasing publishing challenges (noted above) have been too daunting, and many have decided to enter into publishing arrangements with commercial publishers, or to sell their journals outright. In doing so, some societies have been able to retain their control over the editorial process (including peer review¹⁴), the quality of their journals, and their brand identity; but some have not.

After evaluating the Society's current situation vis-à-vis publications, and after many discussions among volunteer leadership about the challenges facing ECS as a publisher, the Board of Directors reaffirmed the Society's commitment to continue its high-quality publications program. We viewed the situation from a financial viability standpoint and from the standpoint of “what's the right thing to do?” To maintain our commitment, ECS would need to take a unique position. That position was centralized around an

Open Access program; and in May 2013, the Society established its Open Access goals, in two phases: an immediate hybrid plan and a longer-term plan.¹⁵

In February 2014, the Society launched the first phase: Author Choice Open Access. Authors choose to: (a) make their articles OA [pay Article Processing Charges (APCs) or take advantage of the Society's many article credit offerings¹⁶]; or (b) have their articles remain part of the subscriptions-based set of articles. This phase meets the need of authors by providing an Open Access publication option for those that must meet funder or institutional mandates, while the Society develops its longer-term plan.

As of this writing (November 20), 273 OA papers have been published, primarily in the flagship *Journal of The Electrochemical Society*. The top three countries from which authors are requesting OA are the U.S., Japan, and China; and about half the requesters are ECS members.

To support the high costs of publishing the journals, and until the next phase of the program can be put into place, ECS will use both author payments and library payments, hence the term “hybrid” Open Access. The plan augments our commitment to our constituency: for authors, to not charge high APCs; and for libraries, to not “double-dip.” In addition, for our library supporters, for the third year in a row, ECS will not raise subscription prices.

The unique, and longer-term part of our OA plan is to “Free the Science™”: **to provide all ECS content at no cost to anyone—no fees for authors, readers, and libraries.** Our pledge to the community is that we will continue to decrease subscription fees and APCs every year until we get as close to completely free as we can. To that end, the Society will be undertaking a ten-year fund-raising campaign to grow the Society's Publications Endowment.

If nothing else, through our Open Access pledge, ECS can help bring some sanity back to the very broken subscription-based publishing model.

More Needs to Be Done

Where does open access go from here? Even though OA has taken hold, and become a “standard” in publishing, the OA landscape has become more bewildering, with many types of OA, many types of author mandates, and many types of licensing.¹⁵ ECS thinks of itself not as a publisher *per se*, but as a “conduit”—getting the content to and from researchers—and our job now, in our role as a scholarly society, is to continue working on the best ways to support authors and readers in compliance and access.

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Through its meetings and publications, ECS has long been a highly-respected venue for researchers to come together to discuss their work in a highly-engaged community of like-minded people from around the world and from many settings (academic, government, corporate).

Looking past Open Access “1.0,” there are many more challenges and opportunities; and with ECS well established in its OA plans, it's time to think about how else we can best support the science.

As *Interface* Co-Editor Vijay Ramani pointed out in his fall 2014 editorial, “Free the Engineering,”¹⁷ in which he refers to the unfortunate trends in the manufacturing sector that have held back the field, the same mistakes are repeated by different manufacturers who

remain unaware of past failures that invariably remain unpublished. He suggested that ECS might “play a role in alleviating this issue by providing a platform for a summit or forum wherein details relevant to selected past (failed or defunct) approaches/processes are collated and presented...”—an intriguing idea.

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Be an advocate. Who wouldn't want to contribute to faster problem solving, encourage innovation, enrich education, and stimulate the economy?

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Others in the field, such as The Open Science Project,¹⁸ have proposed bolder steps to encourage transparency in experimental methodology, observation, and collection of data.

Still others have moved on from “open access” to “open science”—the concept of opening up all aspects of scientific research to allow others to follow the process and collaborate. The concept often includes open access, but also experiments with open peer review and post-publication peer review. Other tantalizing ideas in “open science” include: open notebook science, citizen science, aspects of open source software, and crowd-funded research projects.¹⁹

How You Can Help Free the Science™

Developing our Open Access plan was not simply a matter of deciding what APCs to charge. It was a matter of setting a course as stewards of our science. And our science has become more important than ever because electrochemistry has become vital to solving worldwide challenges in energy, water, and sanitation.

We need your help.

Help break the reliance on “the” impact factor. It's a metric for a whole journal, and not a useful metric when considering an individual for graduation, for tenure, or for a promotion or salary increase.

Whenever you can, make a conscious decision to publish at least one of your papers each year in an OA journal—one with author and reader interests at heart.

Support the ECS Publications Endowment.²⁰ We envision publication costs not being borne by subscribers, nor by authors, but by ECS. This will require fund-raising, leveraging support of other programs to free up operational revenues, careful management of the Society's expenses, cutting costs, and building our established endowment.

Be an advocate. Who wouldn't want to contribute to faster problem solving, encourage innovation, enrich education, and stimulate the economy?



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References

1. For a comprehensive introduction to Open Access (OA), Peter Suber's article continues to be a good starting point: <http://legacy.earlham.edu/~peters/fos/overview.htm>.
2. The ECS mission is “to advance theory and practice at the forefront of electrochemical and solid state science and technology, and allied subjects. To encourage research, discussion, critical assessment, and dissemination of knowledge in these fields, the Society holds meetings, publishes scientific papers, fosters training and education of scientists and engineers, and cooperates with other organizations to promote science and technology in the public interest.”

3. While there are many who feel that online publishing doesn't cost much (because there are no print and postage costs, among other reasons) the opposite is true. There are many components to preparing an article with many inter-operability features, to be hosted in perpetuity, etc. These increase costs every year; that, however, is the subject for another article.
4. J. Beall, “Predatory Publishers Are Corrupting Open Access,” *Nature*, **489**, 179 (13 September 2012), doi:10.1038/489179a, <http://www.nature.com/news/predatory-publishers-are-corrupting-open-access-1.11385>; D. Butler, “Investigating Journals: The Dark Side of Publishing,” *Nature*, **495**, 433 (28 March 2013), doi:10.1038/495433a, <http://www.nature.com/news/investigating-journals-the-dark-side-of-publishing-1.12666>; Scholarly Open Access list of questionable publishers: <http://scholarlyoa.com/publishers/>.
5. Just a few of the many articles on the profits of commercial publishers: <http://www.economist.com/node/21545974>; <http://poeticeconomics.blogspot.com/2012/01/enormous-profits-of-stm-scholarly.html>; <http://svpow.com/2012/01/13/the-obscene-profits-of-commercial-scholarly-publishers/>.
6. NPG/Palgrave Release Author Insights Survey, published October 22, 2014: <http://www.thebookseller.com/news/npgpalgrave-release-author-insights-survey>; Taylor & Francis Open Access Survey: Exploring Authors Views of Taylor & Francis and Routledge Authors: <http://septentrio.uit.no/index.php/SCS/article/view/3134>; Generation Gap in Authors' Open Access Views and Experience, Reveals Wiley Survey: <http://www.wiley.com/WileyCDA/PressRelease/pressReleaseId-109650.html>.
7. Open Access in UK: <http://www.researchinfonet.org/publish/finch/>; <http://www.hefce.ac.uk/whatwedo/rsrch/rinfrastruct/oa/policy/>
8. U.S. Office on Science & Technology Policy memo: <http://www.whitehouse.gov/blog/2013/02/22/expanding-public-access-results-federally-funded-research>
9. The U.S. Department of Energy's public access plan: <http://energy.gov/downloads/doe-public-access-plan>
10. <http://libraries.mit.edu/scholarly/mit-open-access/open-access-at-mit/mit-open-access-policy/>. MIT has been pro-active in getting the word out to its authors, and this writer participated in a panel discussion for MIT faculty and students: <http://libraries.mit.edu/news/chemistry-open/16463/>.
11. Registry of Open Access Repositories Mandatory Archiving Policies: <http://roarmap.eprints.org/>
12. <http://www.chorusaccess.org/>
13. <http://www.arl.org/focus-areas/shared-access-research-ecosystem-share>
14. In ECS's Open Access program, the Society continues to maintain its strict standards of peer review.
15. The main Web page about the Society's Open Access program is <http://www.electrochem.org/oa/>. An earlier *Interface* story about the plan may be found at http://www.electrochem.org/dl/interface/spr/spr14/spr14_p09_11.pdf.
16. If you're an ECS member, you get an article credit. If you attend an ECS meeting, you get an article credit. One of the biggest waivers we put in place was for libraries. If your library subscribes to any of our titles, that institution has unlimited article credits for its faculty and students.
17. V. Ramani, “Free the Engineering,” *Interface*, **23**(3), 3 (2014); http://www.electrochem.org/dl/interface/fal/fal14/fal14_p003.pdf
18. The Open Science Project: <http://www.openscience.org/blog/?p=269>.
19. What Is Open Science: <http://blog.fl000research.com/2014/11/11/what-is-open-science/>.
20. <http://www.electrochem.org/development/>

Correction: March 2, 2015.

An earlier version of this article incorrectly cited the author in the first part of Ref. 4 as J. Sanchez. The author of “Predatory Publishers Are Corrupting Open Access” has been corrected to read “J. Beall”.