

On the Same Page

Open Access Publishing: Part 2 — Transforming the Model of Scientific Publishing March 29, 2010

In my last newsletter, I discussed the collision of opposing forces at work in scientific publishing: researchers want to share their findings as widely as possible; faculty want promotion and tenure; commercial publishers want profits for shareholders; professional society publishers want revenue streams to support the society and the profession; libraries want to see a change because the current model is not economically sustainable; and the government wants to ensure that research findings funded from tax dollars are readily and freely accessible. This complex set of issues won't be fully resolved anytime soon, but change has been in the air for several years, and a UF pilot program, described below, will help UF faculty participate.

Journal publishing is in transition. The traditional subscription-based model is being juxtaposed with the "open access" model. One definition of open access publication is that it meets two conditions ([Bethesda Statement on Open Access Publishing](#)):

1. The authors and copyright holders grant free access to all users and a license to copy or use the work for any responsible purpose, subject to proper attribution of authorship.
2. A complete version of the work in electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability and long-term archiving. (For the biomedical sciences, PubMed Central is such a repository).

The historical background for the above statement, released on June 20, 2003, is quite interesting. In the United States, the most influential group has been the Public Library of Science. In 1999, Dr. Harold Varmus, co-recipient of the 1989 Nobel Prize in Physiology or Medicine for discovery of the cellular origin of retroviral oncogenes — and then director of NIH — proposed that NIH “develop and operate an electronic publishing site that would provide barrier-free access to peer-reviewed and pre-peer-reviewed life sciences literature.” The result, PubMed Central, was launched in February 2000 with content from the Proceedings of the National Academy of Sciences and Molecular Biology of the Cell. To allay publishers' concerns about lost revenues, participating publishers were not required to deposit material immediately upon publication, with most opting for a delay of between six months and a year. Despite these allowances, few journals followed PNAS and MBC in joining PMC.

In October 2000, Dr. Varmus founded The Public Library of Science, or PLoS, with two colleagues — Patrick O. Brown, M.D., Ph.D., a student of Varmus' and currently a Howard Hughes scientist at Stanford, and Michael B. Eisen, Ph.D., a student of Brown's and currently a scientist at the Lawrence Berkeley National Laboratory. Dr. Varmus saw PLoS as “a coalition of research scientists dedicated to making the world's scientific and medical literature a public resource.” Their first action was to encourage scientific publishers to make the archival scientific research literature available for distribution through free online public libraries of science. An open letter was circulated, calling on scientific publishers to make the primary research articles they publish available through online public libraries of science such as PubMed Central. The open letter was signed by nearly 34,000 scientists from 180 countries.

Because the publishers' responses fell short of the policies advocated by PLoS, the PLoS founders concluded that the only way to move the process forward was to become a publisher. In December

2002, PLoS announced that it had received a \$9 million grant from the Gordon and Betty Moore Foundation to launch a nonprofit scientific publishing venture, "controlled and operated by scientists for the benefit of science and the public." PLoS Biology was launched in October 2003. It is instructive to understand the rationale and spirit of this journal launch, as stated by the founders in volume 1, issue 1 of PLoS Biology:

"PLoS Biology, and every PLoS journal to follow, will be an open-access publication — everything we publish will immediately be freely available to anyone, anywhere, to download, print, distribute, read and use without charge or other restrictions, as long as proper attribution of authorship is maintained. Our open-access journals will retain all of the qualities we value in scientific journals — high standards of quality and integrity, rigorous and fair peer-review, expert editorial oversight, high production standards, a distinctive identity, and independence... Our aim is to catalyze a revolution in scientific publishing by providing a compelling demonstration of the value and feasibility of open-access publication. If we succeed, everyone who has access to a computer and an Internet connection will be a keystroke away from our living treasury of scientific and medical knowledge."

PLoS Medicine was launched in October 2004. There are now seven PLoS journals, including PLoS Computational Biology, PLoS Genetics, PLoS Biology and PLoS Pathogens. The Thompson ISI impact factor (roughly, citations to content in a given year divided by articles published that year) is quite high for these journals; in the case of PLoS Biology and PLoS Computational Biology, they are consistently among the highest-impact journals in their ISI category.

The open access movement gathered steam, and in 2008, the Consolidated Appropriations Act stated that "The Director of the National Institutes of Health shall require that all investigators funded by the NIH submit or have submitted for them to the National Library of Medicine's PubMed Central an electronic version of their final, peer-reviewed manuscripts upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication." Consistent with this law, the NIH issued a Public Access Policy requiring that scientists who write articles based in full or in part with NIH-funded research deposit their peer-reviewed manuscripts electronically into PubMed Central as soon as possible after publication acceptance, but no more than 12 months after publication. Publishers are given the option of furnishing NLM/PMC with the publisher's final version, which would then supersede the author's version. Of note, the Omnibus Appropriations Act of 2009 makes the NIH Public Access Policy permanent. It is also pertinent that there is a wave of such public access policies internationally; some sources of research funding have taken an even harder line.

As would be expected, there are a variety of ways that publishers are handling the ongoing publishing transition. Almost all journal publishers now allow authors to post accepted manuscripts to institutional repositories. Many society publishers are making backfiles freely available online, most after a specified embargo period of six to 24 months. Currently, Highwire Press assists with the publication of more than 200 titles that provide free backfiles. Many journals now publish peer-reviewed, accepted papers on their own Web sites before they are published in the print journals (e.g., JBC, BMJ, Pediatrics). But many journals are now offering an "open access" publishing option only upon payment of a publication fee by the author.

Try explaining that to someone outside of academic medicine: "I've worked a couple of years on my research study, which hopefully is of great interest to others in the field, and have written a research report describing my methodology and findings. But instead of being paid for my article, I have to pay the publisher!"

Such is the new economics of "publish or perish." True open access journals — i.e., journals that do not charge readers or their institutions for access to their peer-reviewed articles — must have some source of revenue to cover expenses. And so-called "hybrid journals" — those that charge readers

and their institutions subscription and other fees for access — claim that they need such fees to cover unmet expenses.

To support UF faculty who have papers accepted in approved journals (i.e., those listed in the Directory of Open Access and Hybrid Journals), a pilot project has recently been funded by the Provost's office. In consultation with Judith Russell, dean of University Libraries, and with approval by the college deans, Provost Glover is funding a pilot project to pay up to \$3,000 per article in an open access journal, or \$1,500 per article in a hybrid journal. Detailed policies and procedures of the University of Florida Open Access Publishing Fund Pilot Project will be announced at the April Faculty Senate Meeting and available on the Libraries Web site at that time. All aspects of the program will be reviewed on a regular basis according to specified criteria, and if successful by those criteria, UFOAP may receive continued funding.

UF is putting its money where its mouth is. We support the values embodied in open access publishing as being at the core of our scholarship. And we're now among the very few universities that are supporting open access publishing with dollars as well as words.

Sincerely

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