

Resolved: All scholarship must be made freely available for reading and reuse

## Opening statement from Angela Cochran

I don't believe that it has been resolved that scholarship MUST be made freely available for reading and reuse. I have six key points to this assertion.

One, in order for this statement to be considered "resolved," the vast majority of participants in scholarship would need to agree and that is just not the case. I have the privilege of working with civil engineers and they by and large do not subscribe to the resolution statement. This is not unique to civil engineers. My colleges in mechanical, electrical, aerospace and other engineering disciplines have not seen their communities embraced open science. Likewise, researchers in chemistry and math have been slow to see the needs and/or benefits of open access publishing.

One reason why this is the case in many physical sciences is that the funding is not restricted to government agencies or philanthropic funds. Industry, for-profit corporations, or trade associations that represent them, fund a significant amount of research and have yet to impose any mandates on access to scholarship resulting from the grants. Some of those industry groups require that any data compiled and analyzed remain proprietary as a condition of funding.

Physical science is also seeing greater participation from countries like China, India, and parts of the Middle East where funder mandates for free access is not yet a priority, though that can change.

The situation for humanities and social sciences is even more bleak with only a fraction of the federal funding available and very little philanthropic investment compared to what we have seen in biomedical communities. Additionally, the practice of publishing monographs as opposed to journal articles is a larger barrier in OA as these costs are typically around \$10,000 as opposed to journal article fees from \$1500-3000.

My second point is that it's not clear to me which "scholarship" must be freely available. Again, an argument could be made that certain deliverables from tax-payer funded research be made publicly available, but what exactly do those funders have "ownership" of? Typical grant deliverables required include a report to the agency and increasingly data or materials collected. It seems reasonable to expect these outputs to be made freely available. For the most part, subsequent publications in a journal or a book are not requirements of funding.

If grantees are not required to publish scholarship resulting from their funded research in journals or books, then why do they do so? Authors are asked this question frequently in surveys and the answers are always the same: Career advancement, legitimacy bestowed by the publication peer review process, future funding, and dissemination to an audience or community interested in the same research areas. The broken incentive structure for academics means that many researchers attempt to produce as many papers as possible from one grant. This is encouraged not only by their institutions but also the funding agencies that want to see the maximum output from their funding dollars.

This leads me to my third point, we have not resolved the question of who should pay for the dissemination of scholarship in publication formats. Currently, the most common sources of payment are institutional libraries via subscriptions and open access payment models; funding agencies through their own publication outlets, their own repositories, or allowance of open access fees from grant money; individual authors who largely find the money from either the funder or the institution where they work; and increasingly philanthropic endeavors.

There are obviously problems with these scenarios, which is why a shared expense solution has yet to be found. The current APC model is leaving out researchers that aren't well funded whether they are from the Global South, Africa, or small institutions in the US. Further, funding agencies are beholden to the whims of elected officials and institutional libraries are largely being sidelined by larger institutional investments. I would be remiss to ignore the growing concerns that all of these stakeholders are less comfortable with supporting access to research by paying large commercial for-profit publishers.

As I have described the challenges with who is paying, I must also express the obvious—there are costs. At this time, there is not widespread support amongst the participants in scholarship that peer review and production services are unnecessary.

Peer review is still valued by the vast majority of the overall research community as a valuable service provided by fellow researchers and facilitated by publications. Likewise, language clean-up, reference linking, tagging, online posting in multiple formats, metadata creation and delivery, search engine optimization, and archiving for discovery in perpetuity are not only desirable services, but vital for authors and the communities they represent. Of course, all of these services carry expenses. Many have lamented the “high cost of publishing.” A 2008 report conducted by Cambridge Economic Policy Associates concluded that article costs for low rejection rate journals average about \$1500, with high rejection rate journals over \$4000 per article. These estimates seem in line with some open access publishers, including PLOS whose financial disclosures indicate a cost of about \$1500 per article and eLife hovering at a little over \$4000, per the recently released “STM Report: An overview of scientific and scholarly publishing.”

The expenses related to expected journal and book activities are not insignificant. I suspect we won't see any drastic reductions until those services are deemed unnecessary by the global community.

Globalization is another topic I would like to briefly discuss. The aforementioned 2018 STM report, found that China has overtaken the US in article output claiming 19% of articles while the US claims 18%. Further, the report claims that looking at current trends, China will outpace the US in funding research in the early 2020s. China has a national strategy for becoming the world leader in quality research and they are putting their money where it's needed. My point in mentioning this is that the fate of access to scholarship may largely rest with China as a major influencer and not the White House Office of Science Technology Policy or the European Coalition behind Plan S. It remains to be seen how China might decide to weigh in on access issues, but I don't believe we can consider anything “resolved” until that happens.

My next point is that reuse of scholarship may be less resolved than free access to scholarship. The creative commons licenses have been largely hailed as the licenses of choice for designating re-use; however, while CC-BY—a liberal license that only asks for attribution—is the defacto OA choice, many authors are not comfortable with this license and have strong preferences for creative common licenses

that allow for restrictions on derivative works or commercial exploitations of the work. Many authors who see value in having their work made freely accessible are forced to accept attribution only models, but when given choices more restrictive licenses are preferred. BioRxiv has reported that the Creative Commons non-commercial license is the most widely selected choice made by researchers on their platform. Likewise, the 2014 Open Access Author Survey by Taylor & Francis found that the most preferred license is the CC-BY-NC-ND, which puts limits on derivatives and commercial reuse. In fact, this survey found that overwhelmingly, the least preferred license was the CC-BY.

Liberal re-use licenses suffer from fears that fraudulent behavior will tarnish the reputation of the researcher or even worse, lead to dangerous outcomes. More and more authors are finding that papers they published have been republished in disreputable journals with completely new author names replacing the original team.

A discussion I recently had with a lawyer and some researchers explored whether a paper published under CC-BY could be republished under a new author's name with a tiny 6 point type attribution somewhere in a footnote. The resolution was that it is likely allowed under the CC-BY license, it would be considered unethical, and an aggrieved author would likely need to sue in order to find out for sure. The threat of litigation has also been raised in trying to determine the limits of non-commercial provisions of the creative commons licenses. Personally, I am concerned about subjecting authors to licenses that are so ambiguous as to the author rights that only a court of law would determine what is actually allowed or not allowed.

In closing, while the scholarly ecosystem has certainly moved a lot closer to the resolution statement in the last 10 years or so, I think it is too early to consider it resolved. I would like to see new business models emerge that allow for quality publication of scholarly content under some sort of shared expense arrangement. New business models must be sustainable for all parties involved.

Wide adoption of preprint activity as well as green OA or self archiving practices will push the scholarly community even closer to the resolution statement. That said, preprint servers are largely supported by philanthropic enterprises that do not necessarily represent a sustainable business model and Green OA still suffers from low author compliance, even with funder and university mandates.

Thank you.