Science Societies

Navigating open access, science what it means for early career members

By Amanda J. Ashworth, , ASA Early Career Board Representative

May 30, 2021

Source: Shutterstock/Good Studio.

Source: Shutterstock/Good Studio.

There are increased discussions around open access and open science in journals and our three Societies, *but what do these terms really mean*? Here we try to dissect its meaning for early career scientists and professionals.

Open science is broadly focused on making the communication of research open, transparent, and reproducible for current and future generations. Many publishers and researchers argue that the future of science is open—and with increased "openness," comes improved reproducibility in science. Examples of how some journals are increasing the transparency include policies requiring open data, such as ensuring the transparency and accessibility of data accompanying all published articles. Some journals even provide outputs like registered reports, protocols, and published peer

review history to go one step further in contextualizing their work to ensure it remains replicable in efforts to make science sharable and reusable without restriction.

Taxonomy of open science, of which open access constitutes one pillar. Source: The FOSTER portal (**www.fosteropenscience.eu**).**pen access** is one pillar of open science (see Figure **1**) and is the free, immediate online availability of research articles coupled with the rights to use these articles in the digital environment, according to the Scholarly Publishing and Academic Resources Coalition. The distinction between open access and non-open access publishing options is that open access transfers the cost of an article from the subscriber to the author(s). There two general types of open access journals:

- **Open access only**—the entire journal is open access.
- **Hybrid**—these are subscription journals that may not charge authors any fees, or page charges to publish their articles, but offer an open access option for authors or institutions who wish to pay for it. Articles are often available before the journal issue is published under this option.

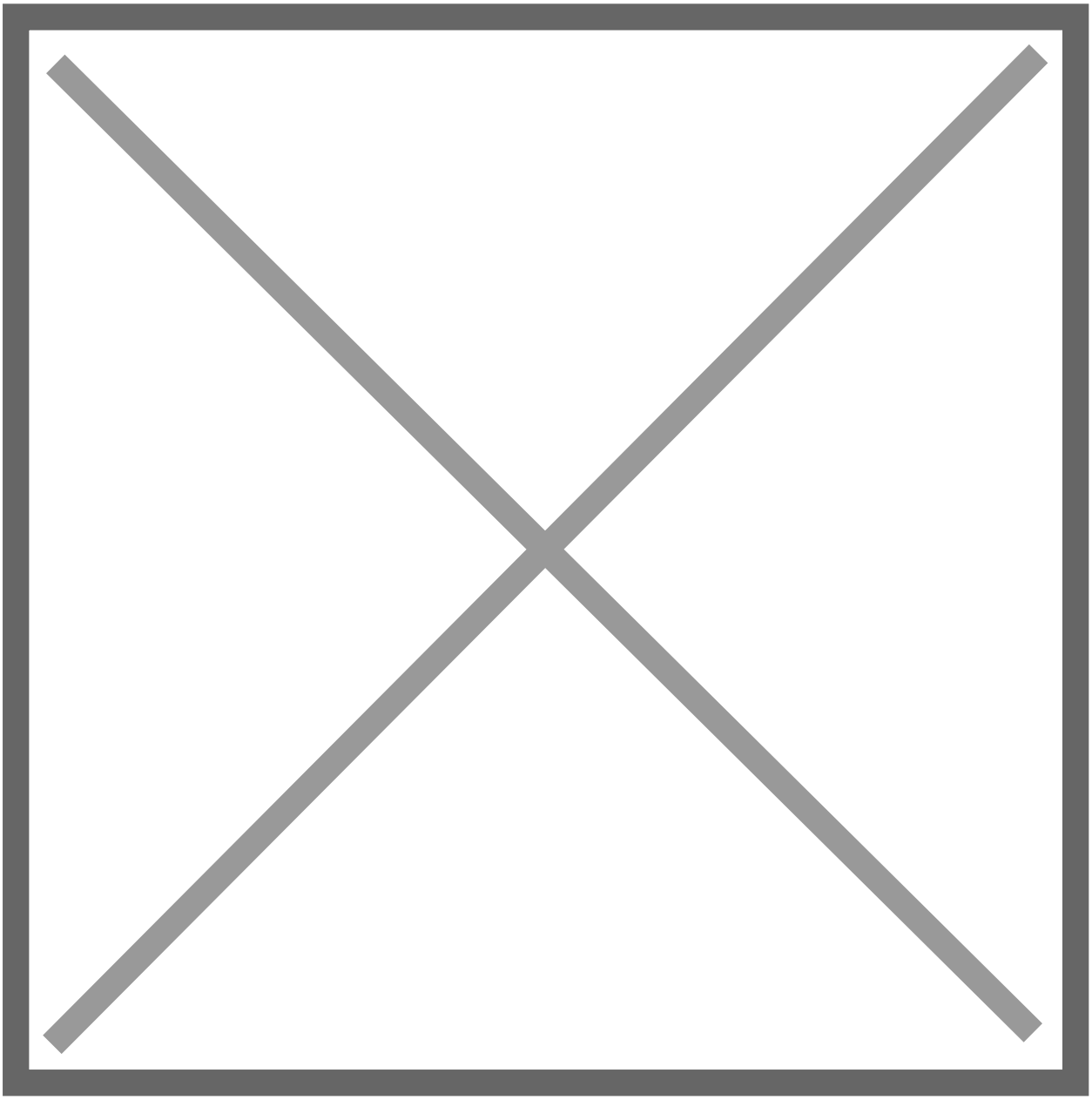

Figure 1*Taxonomy of open science, of which open access constitutes one pillar. Source: The FOSTER portal (****www.fosteropenscience.eu****).*

Open Access during the Pandemic

The Public Library of Science states that “by providing immediate and unrestricted access to the latest research, we can accelerate discovery and create a more

equitable system of knowledge that is open to all." A recent example of open access is that during the COVID-19 pandemic, most publishers decided in early 2020 that all articles related to COVID-19, including those behind subscription paywalls, would be immediately released as open access. The accelerated rate of vaccine development and therapies to treat COVID-19 patients is attributed to this open access decision. Therefore, it is likely that more and more journals will be transitioning to open access only. This is a trend in the scholarly publishing industry although publishers have received scrutiny over the cost of subscriptions. Therefore, this means that early career members will likely be required to pay greater publication costs; however, there is expected to be a drop in the cost of subscriptions.

Some Society journals have transitioned from a hybrid subscription to gold open access (see definition below) only, such as *Vadose Zone Journal*, wherein the author pays an article publication charge (APC) that applies the Creative Commons license to the article and the article is immediately and freely available online for all to read, download, and share. Dr. Markus Flury, Editor of the *Vadose Zone Journal*, says that "making science available to everybody is becoming more and more important. Having publicly funded research published behind a paywall is not a sustainable model, and open access should become the standard model for scientific publications. Because open access requires authors to pay an APC, authors need to be supported by their funding agencies, institutions, or governments to have these APCs covered. Europe has already implemented several mechanisms of support for authors; however, here in the U.S. we are not that far yet."

Common Open Access Options

The most common types of open access options include:

- **Gold open access**—this option makes the final published version of an article freely and permanently accessible for everyone, immediately upon publication. Copyright for the article is retained by the authors, and most of the permission barriers are removed. Gold articles are often published ahead of the journal issue. Open access scholarly literature always carries less restrictive copyright and licensing barriers than traditionally published works for both the users and the authors.
- **Green open access**—Also referred to as "self-archiving," this is the practice of placing the final accepted version of an author's manuscript into a repository, making it freely accessible for everyone after a prescribed time period. The version that can be deposited into a repository depends on the funder or publisher. Unlike gold open access, the copyright for these final accepted article versions usually sits with the publisher of, or the society affiliated with, the title, and there are restrictions as to how the work can be reused. Authors publishing in ACSESS journals retain copyright for their work in the author-accepted format, but the publisher owns the copyright to the journal-published version of record of the article.

With trends towards open access and open science, early career researchers are the future of open science practices. Publishing in open access journals is likely to become increasingly important for early career members as it will make their research findings accessible to a broader audience and allow for greater downloads and citation rates, but it may come at a cost. When asked about open access, ASA President Dr. Jeff Volenec stated that, "while the transition from the current subscription-based publication model to one based on open access presents an array of challenges for

authors, publishers, and professional organizations like ASA, it is the future of scholarship and scientific enterprise. Providing complete access to the data underpinning evidence-based recommendations strengthens society's confidence in science and the important work we do. In addition, the democratization of science, making research outcomes freely available to all and not just those who can afford them, is an equity and social justice issue. Knowledge should belong to all."

"Providing complete access to the data underpinning evidence-based recommendations strengthens society's confidence in science and the important work we do. In addition, the democratization of science, making research outcomes freely available to all and not just those who can afford them, is an equity and social justice issue. Knowledge should belong to all."

More news & perspectives

Back to issue

Back to home