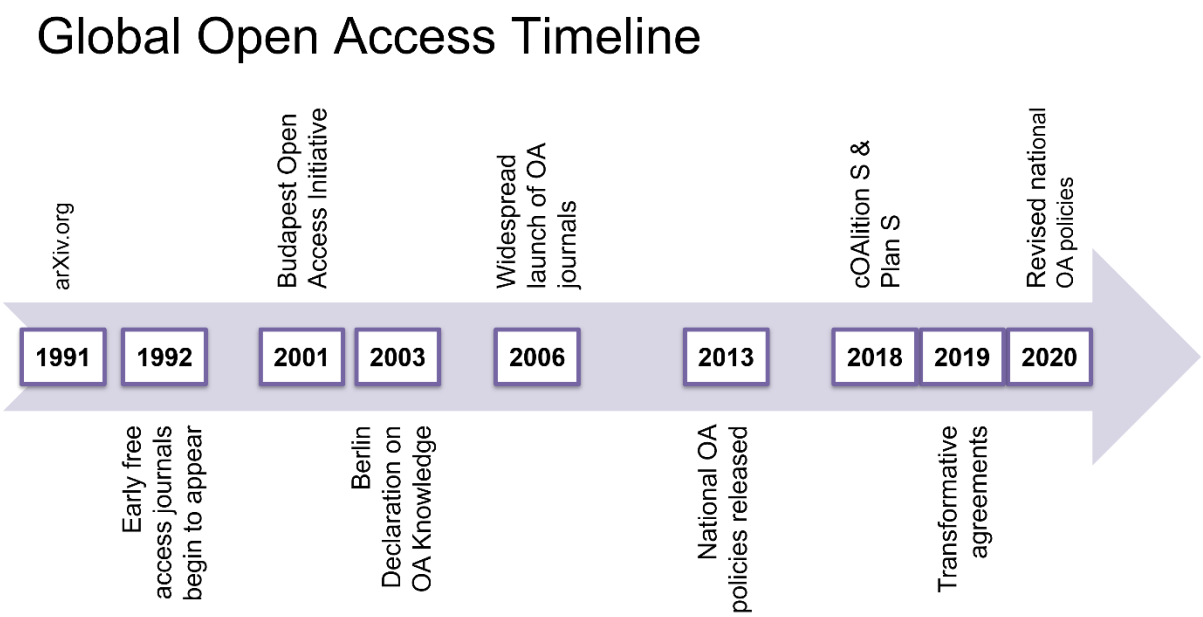
Open Access workshop @ CAP 2023

At the 2023 CAP meeting, Canadian Science Publishing (CSP) and the Canadian Journal of Physics (CJP) hosted a workshop on open access publishing. This workshop was presented by Celia Charron, Editorial Director for CJP, and Jocelyn Sinclair, Journal Development Specialist for CJP, with input from Profs. Robert Mann and Marco Merkli, Editors-in-Chief of CJP.

What we shared:

The timeline:



The physics community was one of the first to promote Open Access to science by sharing data, preliminary manuscripts, and final publications on the arXiv platform.

The basic language of Open Access

An open science future encompasses making all outputs of scientific research available and discoverable for public use. The definition of open access is the free and unrestricted access to scholarly research articles that are typically published in academic journals. These articles are given a CC BY license, which allows re-users to distribute, remix, adapt and build upon the author's work as long as credit is given to the original author.

Scholarly publishing has many unique terms and definitions, particularly when it comes to open access. We talked through the Open Access "colours":

Green: Green open access papers are freely accessible as the author-accepted version of the manuscript via an open access repository (e.g. arXiv, TSpace).

Bronze: Bronze open access papers are free to read on the publisher's website but are not typically licensed for reuse.

Gold: Gold open access papers are immediately and freely accessible on the publisher's website as the version of record via a fee paid by or on behalf of an author. They are published under a CC BY license.

Diamond: Diamond/Platinum open access journals typically receive financial support from one or more institutions and organizations and thus do not have article processing charges (APCs) or other fees for publication

Hybrid: A blended format wherein individual articles have a CC BY license, and others remain accessible on a subscription/paid basis

Checkout Canadian Science Publishing's Open Access Glossary for a searchable index of more terms you may encounter on your open access journey.

Why the push for Open Access?

Scholarly research and publishing have long suffered from inequalities and exclusion and there is a need to address those systemic issues as open science advances. Many of the Open Science principles developed by UNESCO and other global organizations highlight equity, diversity, and inclusion as central tenets of an open future. In their recommendation, UNESCO describes open science as a global public good that "should belong to all humanity and benefit humanity as a whole," which is why they advocate for science to be open, inclusive, equitable, and embrace a diversity of knowledge.

Research takes place across the globe and it benefits everyone to ensure that scholarship and scholarly communications are as inclusive as possible so that all voices can be heard. We are facing grand challenges that are global in their reach, such as the COVID-19 pandemic and climate change. Now, more than ever, we need our research communities to be inclusive and truly global in scope so that we can come together to identify challenges, gather data, and collaborate to develop solutions that benefit everyone in a unified way.

Public Funds produce Public Results: Funding agencies are pushing to make all research accessible to the people that fund the work – primarily the tax-paying citizen. However, to make this research accessible, there are costs associated – especially if the research is being published in a peer-reviewed journal. Traditionally, publishers have offset this cost through subscription/access fees (usually paid by university or library conglomerates). The push towards open science and budget cuts to libraries has resulted in an acceleration for publishers to investigate open access publishing models. To support these models, publishers charge article processing charges (APCs). APCs vary greatly across different journals and publishers and can be paid by authors or on behalf of the authors by their funders, institutions, or other interested parties.

What does a publisher provide in exchange for subscription/access fees or APCs?

- Vetted Peer Review and Editorial Processes
- Professional oversight – ethical oversight and best practices
- Protecting content – unique identifiers, article preservation, standard XML metadata tagging, reuse policy
- Professional typesetting and copyediting
- Amplifying research by facilitating discovery, usage, and sharing
- Dissemination via websites, marketing, and communication
- Response to the research community

You can read more on this topic from our Director of Strategic Initiatives, Mike Donaldson, in his blog post here.

This is a Global Movement…

As open access gains more traction in the scientific world, different countries have responded with a version of policies and frameworks to support the researchers using their national funds. A few notable ones are Plan S in Europe, the Nelson Memo in the US, and the UKRI OA Policy in the UK. Most of these policies require full and immediate open access publishing, although the routes of compliance can vary, and may require compliance with open data and other open science policies.

In 2022, 52.4 % of Canadian research was published as OA Green, Gold, Bronze, or Hybrid – below the global average of 55.4 %.

Compare with other high research output countries:

- Sweden: 76.2 %
- United Kingdom: 68.4 %
- USA: 51.7 %
- Japan: 47.3 %
- India: 33.5 %

…that is coming to Canada!

On July 4, 2023, the presidents of Canada's federal research granting agencies announced a review of the Tri-agency Open Access Policy on Publications. The tri-agencies are the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), and the

Social Sciences and Humanities Research Council of Canada (SSHRC). The goal of this review is to require peer-reviewed journal publication arising from agency-supported research be freely available, without subscription or fee, at the time of publication, by the end of 2025.

You can see the whole announcement and share your opinions with the federal grant agencies here.

The physics community and open access

While uptake of open access publishing varies across disciplines, the physics community is moving towards an open access future. All major physics publishers already offer Open Access publication, either through dedicated or hybrid journals. Many publishers are promoting cost-free Open Access via agreements with external funding sources, or temporary offers which are funded internally on subscription fees from other journals to launch the new publications.

The Directory of Open Access Journals (DOAJ) is an open and global index of fully open access journals that has established rigourous criteria to ensure that only trusted open access journals are indexed. Check out DOAJ for fully OA journals or look up your favorite journal's hybrid OA policy.

Current barriers to Open Access

The largest barrier to open access that authors raise is cost. APCs can vary widely from $1000 CAD to $15,000 CAD, with the average being about $3000 CAD. This forces researchers to choose between funding research and paying to have it read. This barrier is inequitable – it will affect researchers from different universities, fields, and global economies to varying extents, introducing additional bias in the publication of scientific work unrelated to research quality. We are also seeing a pattern of inflation of costs from for-profit publishers, who are charging high APCs to make up for the subscription losses that will occur when global OA policies are in place.

Another barrier is the mismatch of academic, funding agency, and publisher timelines. The lag time between policy development/mandates and funding agency support has left many researchers in an uncertain middle ground where public access to their research is expected and encouraged, but not

funded. The lack of adjustment time is causing a valid pushback to the development of new policies as funding agencies and publishers scramble to keep up.

An Open Access, no-cost home for Canadian Physics research

Canadian Science Publishing's mission is to enhance the reach, rigour and relevance of science so that people can trust, find and use it – this goes hand in hand with the open science mission that we find ourselves moving towards as a stakeholder in sciences.

One way that CSP and CJP are working to reduce the above-mentioned burdens is by signing OA agreements with various Canadian and international funders. We are happy to announce that authors belonging to CRKN member institutions can publish their accepted articles Open Access at no cost in the *Canadian Journal of Physics*, for papers submitted up to December 31, 2026. This represents how CSP is working closely with thethe Canadian research community to support Canadian researchers as we navigate this shift towards open science.

In addition to the CRKN deal, CJP has agreements with the Canadian Federal Science Libraries Network, the University of California, ETH Zurich and the University of Oslo, representing 58 universities and research institutions. We also support researchers from Research4Life institutions. As authors, you have a huge impact over how your institutions and libraries make decisions on which journals to support through these agreements, so we encourage you to advocate for the access that you want.

A note from our Editors-in-Chief:

Open access represents a major transition in scientific publishing. In some ways it is similar to models used over 40 years ago, when authors remitted page charges to support the costs of disseminating their refereed scientific work in reputable journals. Physics journals dropped page charges in the 1980s, and we have (with rare exceptions) been used to publishing our results `for free'. Subsequently the internet radically changed things, affording all scientists the ability to share their work online. Physics was ahead of the curve here, replacing the old hard-copy preprint dissemination with arXiv. With Open Access now reshaping the business model for scientific publishing, it is important that we stay ahead of the curve once again. Discussions of how Open Access will affect our scientific work, our grants, and our access to information are all topics of significant importance that we need to engage with as a physics community.

- Profs. Robert Mann and Marco Merkli, CJP Editors-in-Chief

Questions from the CAP community:

How do we address reviewer burn-out?

Right now, peer review is reliant on the volunteer labour of experts, primarily faculty members. While this labour is often considered to be built into the "service" component of a Faculty position, the pace of research and publication is ever increasing, as are the demands on community members. There is no one solution to this problem, but some of the following strategies are being tried across publishing, each of which come with advantages and disadvantages:

1. Recruitment of more qualified reviewers into the review pool to reduce individual workload;

2. Rewards for reviewers – incentives for reviewers can include discounts on Author Processing Charges with the journal, awards, or letters to their institution
3. Setting up processes and training so that early career researchers can get involved in the publishing process if they're interested.

How do we combat bias in peer review?

Training on unconscious bias, and asking reviewers and editors to reflect on their own potential biases when they handle a manuscript, can raise awareness of the problem and introduce a measure of personal self-policing among people involved in peer review. Diversifying editorial boards can ensure that a broad range of identities contributes to journal direction. Similarly, encouraging editors to select diverse reviewers (e.g., gender, geography, ethnicity) can ensure that a broad range of identities contributes to editorial decision-making. Providing reviewers with specific and structured review questions can also keep the focus on the science and mitigate biases that could more easily creep into unstructured reviewer reports.

Chat with us!

Please reach out any time to the Canadian Journal of Physics team if you have feedback or questions.

Want to bring a workshop to your university or conference? Reach out!

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