



Developments in open access since July 2023: an addendum to the Chief Scientist's adviceⁱ

Australia's Chief Scientist, Dr Cathy Foley, submitted advice to government on open access to research literature in July 2023.

Since then, new research and reports have continued to build the case for open access, discussions have continued about the best approach, and initiatives have continued to be implemented in Australia and internationally. The way forward for a national approach to open access in Australia needs to be informed by awareness of these developments.

The case for open access

The Strengthening Australian Democracy report identifies online mis- and disinformation as threats to democratic resilience.ⁱⁱ A national approach to accelerating the transition to open access could help to address this by providing Australians with greater access to trustworthy evidence-based information.

Recent research has also added to evidence on the benefits for academia,ⁱⁱⁱ confirming that open access papers have greater reach than paywalled papers. They attract more total citations, and those citations come from scholars in a wider range of locations, institutions, and fields of research.

Issues and developments in academic publishing

The proportion of new Australian-led journal articles locked behind a paywall has decreased in recent years, from 50% in 2021 to 35% in 2023.^{iv}

This increased uptake of open access is due to 'gold' open access publishing, where authors or their institutions pay a fee to publish in either fully open access or hybrid journals. Gold open access has grown to 56% of new Australian-led journal articles in 2023.^v This has been driven by the implementation of new read and publish agreements^{vi}, which cover the open access publishing fees charged by publishers as well as access to subscription content for the institutions included in the agreements.

However, 64% of journal articles published globally in the past 15 years are still locked behind paywalls,^{vii} accessible only to those with access to their institutions' journal subscriptions or the means to pay to read individual articles.

In 2023 Australian organisations paid about half a billion dollars to publishers for academic journal subscriptions, read and publish agreements and open access publishing fees.^{viii} Like the Chief Scientist's advice, an Australia Institute report raises concerns that Australia is not getting value for money from its expenditure on academic publishing.^{ix} Other papers highlight the high profit margins of the major publishers and a lack of transparency of production costs and negotiations,^x and have raised concerns that current pay to publish approaches shift costs from readers to authors and creates inequity in the research sector.^{xi}

Analysis by the Office of the Chief Scientist has also indicated inequity in the system. Payments to publishers by universities were checked against their international university ranking and a medium correlation ($R^2=0.6$) was found – in general, higher ranked universities paid more to publishers than those universities further down the rankings.

Discussions and developments on open access models

The G20 – Chief Science Advisers Roundtable held in 2023 agreed that there is a need to synergise global efforts to expand access to scholarly scientific knowledge.^{xii} A cOAlition S report, ‘Towards Responsible Publishing’, also outlined a widespread desire among stakeholders for transformative change in publishing to address systemic problems and accelerate the transition to open access^{xiii}. A range of approaches are being discussed and implemented globally including:

- ‘Diamond’ open access initiatives where no publishing or access fees are charged by the publisher.^{xiv} However, as a recent editorial has pointed out, diamond open access is not free: ‘Even when editors work entirely pro bono, as we all do, the administration of the editorial pipeline, copy editing and the infrastructure to make articles available, known and traceable require considerable financial resources.’^{xv}
- Investing in repository infrastructure,^{xvi} including aligning national infrastructure to enhance interoperability and discoverability.^{xvii}
- Rights-retention strategies to enable the depositing of journal articles in open access repositories immediately upon publication.^{xviii}
- Transformative agreements, including read and publish agreements that cover open access publishing and access to subscription content for participating institutions. The Council of Australian University Librarians now has 25 agreements with publishers.
- Research funder mandates that require research outputs to be open access. This approach is being implemented in many countries, including by the National Health and Medical Research Council in Australia. In the US, work is underway to implement funder mandates by 2025.^{xix}
- National digital libraries. Egypt continues to provide its citizens with access to a large collection of academic journals from about 50 publishers through the Egyptian Knowledge Bank. UNESCO has commended this initiative and is using it as a case study to assist the development of similar public digital platforms.^{xx}

The Chief Scientist’s advice considered repository and funder mandate models but identified some disadvantages. For example, repositories are duplicative and raise concerns for research quality and integrity, as version control can be compromised. As the advice outlines, there is potential to negotiate and work with publishers. They have established robust systems and processes to manage the publishing process and are the gatekeepers of a huge global archive of research literature.

Research funder mandates do not offer a full solution. To comply with these mandates, researchers often need to pay open access publishing fees to publish in their preferred journals, as not all journals (and not all researchers) are covered by read and publish agreements, and publishers typically place embargo periods on depositing articles in open access repositories.

Next steps for Australia

The approaches mentioned above focus on open access publishing of new Australian research, which comprises less than 4% of the global output. The public access model proposed by the Chief Scientist would also do this, but in addition would provide all Australians with access to the global pool of literature published in academic journals, including previously published research.

The Chief Scientist will hold further discussions with targeted stakeholders to inform the development of policy implementation options. Specific stakeholder input will be sought to further develop use cases for open access to better articulate the case for a model that delivers broad-based public access and explore implementation approaches.

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- ⁱ Office of the Chief Scientist, *Advice on open access models: Unlocking knowledge for national benefit*, Australian Government, 2024.
- ⁱⁱ Strengthening Democracy Taskforce (2024), [Strengthening Australian democracy: A practical agenda for democratic resilience](#), Department of Home Affairs, Commonwealth of Australia.
- ⁱⁱⁱ C Huang, C Neylon, L Montgomery, R Hosking, J Diprose, R Handcock, K Wilson 'Open access research outputs receive more diverse citations', *Scientometrics*, 2024, 129(7):825-845, doi:10.1007/s11192-023-04894-0
- ^{iv} STM Association, [Open Access Uptake by Countries/Regions](#) [data set], accessed August 2023.
- ^v STM Association, [Open Access Uptake by Countries/Regions](#) [data set], accessed August 2023.
- ^{vi} Agreements between publishers and the Council of Australian University Librarians (CAUL), as well as individual institutions, including universities, CSIRO and ANSTO.
- ^{vii} Web of Science, [Web of Science Core Collection](#) [data set], Clarivate, 2024, accessed 26 August 2024
- ^{viii} This is an estimation based on a 2021 survey conducted by CSIRO Futures for the Office of the Chief Scientist, updated figures collated by the Office of the Chief Scientist and an estimate of open access publishing fees based on the volume of Australian authored articles published as gold open access in 2023.
- ^{ix} K Scicluna (2024) [Ending profiteering from publicly-funded research: Tackling the academic publishing oligopoly](#), The Australian Institute, accessed August 2024.
- ^x International Science Council (ISC)(2023)'[The case for Reform in Scientific Publishing](#)', ISC, Doi: 10.24948/2023.14
- ^{xi} P Sharp, W Bonvillian, R Desimone, B Imperiali, D Karger, C Chakanetsa, A Brand, N Lindsay, M Stebbins (2023) [Access to Science and Scholarship: Key Questions about the Future of Research Publishing](#) [Unpublished Report], Massachusetts Institute of Technology, Cambridge, Massachusetts, Accessed 30 July 2024.
- ^{xii} G20- Chief Science Advisers Roundtable (G20-CSAR)(2023), [Outcome Document & Chair's Summary](#), Gandhinagar, Gujarat.
- ^{xiii} A Chiarelli, E Cox, R Johnson, L Waltman, W Kaltenbrunner, A Brasil, A Reyes Elizondo, S Pinfield (2024) '[Towards Responsible Publishing](#)', Zenodo, Doi: 10.5281/zenodo.11243942
- ^{xiv} For example, in Germany the Deutsche Forschungsgemeinschaft (DFG) has called for proposals to establish a service centre to expand and consolidate diamond open access publishing. Deutsche Forschungsgemeinschaft (DFG)(n.d), [Call for Proposals: Fresh Momentum for Diamond Open Access](#), DFG, accessed August 2024.
- ^{xv} '[Editorial: Open Access: No Closed Matter](#)', *European Journal of International Law*, 34:3 (2003), doi:10.1093/ejil/chad046.
- ^{xvi} For example, in 2023 Universities New Zealand (Te Pōkai Tara) released an Open Access Statement confirming that they would continue to pursue open access by resourcing university repositories and supporting all models of open access. Universities New Zealand – Te Pōkai Tara (n.d), [Pan-university Statement on Open Access](#), Universities New Zealand – Te Pōkai Tara, accessed August 2024.
- ^{xvii} The Japanese government announced in 2024 that it will provide funding for standardised institutional repositories hosted on a unified national server. Publication Plan: News for Medical Publication Professionals (n.d) '[Japan initiates a nationwide plan towards open science](#)', *The Publication Plan: News for Medical Publication Professionals*, accessed August 2024; D Chawla (30 June 2024), '[Japan's push to make all research open access is taking shape](#)', *Nature*, Accessed August 2024.
- ^{xviii} In Australia, a research project has led to recommendations for a national Rights Retention Strategy. Owning Knowledge, '[General recommendations for research management in Australian universities](#)' Owning Knowledge website, n.d, accessed August 2023.
- ^{xix} In the US, the White House Office of Science and Technology Policy (OSTP) released a [report](#) in November of 2023 that covers the current state of open access policy and implementation in the US. The report acknowledges the rapid changing state of open access as global policy developments and the research landscape change. White House Office of Science and Technology Policy (2023), *Report to the U.S. Congress on Financing Mechanisms for Open Access Publishing of Federally Funded Research*, OSTP, United States of America Government.
- ^{xx} UNESCO, [Decisions adopted by the Executive Board at its 217th session](#), Paris, 18 November 2023; <https://www.unesco.org/en/digital-education/learning-platforms-gateway>