

Public access is not equal access

On 25 August, the White House Office of Science and Technology Policy provided guidance for scientific publishing aimed at making publications and their supporting data—the products of federally funded research—publicly available without an embargo by the end of 2025. The American Association for the Advancement of Science (AAAS, the publisher of *Science* and the *Science* family of journals) strongly supports this guidance. As written, several paths to public access remain possible. It will matter greatly to the scientific enterprise which become predominant.

As a scientific membership organization, AAAS looks at public access through the lens of scientists and engineers. We have experimented with various public access models over the past decade. The *Science* family has five subscription journals that libraries pay for access to content, and one journal for which authors pay an “article processing charge” to make the version of record of their paper freely available [“gold open access (OA)”]. All six journals publish excellent science and influential analyses, but their sustainability models differ. Each model supports the high quality that authors, readers, librarians, and funders expect us to provide through rigorous peer review shepherded by professional editors, careful editing, access to all relevant data, striking and informative visuals, and an engaging website. Importantly, we put substantial post-publication resources into preventing misinformation by informing accurate coverage of research through mainstream and social media.

From our experience, open and accessible data are essential to scientific integrity and reproducibility, and we require this accessibility immediately upon publication. Public access to trusted scientific information is also important, and situationally appropriate communication of accurate and understandable science with every audience is paramount. When any reader is unable to separate wheat from chaff, we must help by providing expertise to sift well-done from poorly done science.

Public access should foster a diverse universe of authors and readers regardless of their economic circumstances. This drives scientific excellence and public understanding. Some models for public access are bad for inclusivity. Gold OA journals, for which authors pay publication charges, work for senior scientists who are well-funded, tenured, and overwhelmingly male and white, but not so much for early-career scientists who may be poorly

funded, not yet tenured, and much more diverse. Also disadvantaged are scientists at smaller schools, including historically Black colleges and universities, and in underfunded disciplines like math and the social sciences. Although it enables “open access” to readers, this model can be inequitable for many scientists and institutions.

Gold OA damages the scientific enterprise when it incentivizes a volume business model in which every paper is a quantum of revenue that must be published somewhere in a publisher’s ecosystem. The perverse incentive for publishers is to accept more papers, which furthers academia’s publish-or-perish mindset, makes predatory publishing more enticing, and dilutes the scientific literature. As a publisher of a gold OA journal, we’ve made the costly decision to maintain editorial quality and not accept papers just to meet financial targets—but we understand the temptation.

As a scientific membership society, AAAS seeks the best path forward for the enterprise it serves. We are actively seeking to balance the tensions between equitable access for readers and equitable access to publishing. As such, *Science* is made available through progressively priced licenses whereby larger, more research-intensive institutions pay more. We will soon provide immediate public access

to all taxpayer-funded research through a policy called “green OA-zero day,” which allows *Science* authors to post their “author accepted manuscript” (a fully peer-reviewed and revised version), without delay or incurring additional fees, in a public repository of their choice. This approach allows immediate public access without requiring authors to pay a publication charge, while maintaining the ability of *Science* to fulfill its mission of communicating groundbreaking research discoveries and illuminating the impact of research on society.

AAAS recognizes that its approach is not perfect and may not work for all journals, so we continue to explore other ideas. We are eager to work with the White House, funding agencies, and anyone else to implement policies that optimize equity for authors and readers. In the meantime, our approach ensures that world-changing science is published and placed into the public realm regardless of a scientist’s geographic location, institutional affiliation, academic rank, or identity. We must not sew more structural inequity into the very fabric of the enterprise we seek to improve.

—Sudip Parikh, Shirley M. Malcom, Bill Moran

“Public access should foster a diverse universe of authors and readers...”

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