

EDITORIAL | JULY 01 2015

More open access to AJP articles **FREE**

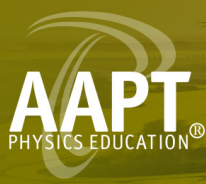
Editor: David P. Jackson

Associate Editor: Daniel V. Schroeder



Am. J. Phys. 83, 581–582 (2015)

<https://doi.org/10.1119/1.4922259>



Special Topic:
Teaching about the environment,
sustainability, and climate change

[Read Now](#)

More open access to AJP articles

If you are a meticulous reader of the online version of AJP, you might have noticed some subtle changes during the past few months.

The online version is accessed through the Scitation web site,¹ where each article is marked using a small icon with the abbreviation F, OA, S, or T. These symbols are defined in the right-hand column and designate the content as either Free, Open Access, Subscribed, or free Trial. Until the end of last year, all content in AJP was labeled S, meaning that non-subscribers could access it only by paying a \$30-per-article fee. Most colleges and universities are subscribers to AJP—or at least they should be²—and these subscriptions are typically verified via IP addresses so that access is automatically available on any computer at the institution. Alternatively, nearly all members of the American Association of Physics Teachers (AAPT) receive personal online subscriptions to AJP as part of their membership and can therefore log in to view AJP articles.

However, in January of this year AJP published its very first *open-access* article. This article, which discusses an alternative approach to Kirchoff's laws for circuits,³ is published under a Creative Commons (CC-BY) license⁴ and is freely available via Scitation to anyone on the internet. We are now offering this open-access option to all authors of full-length papers at a per-article cost to the authors (or to their institutions or funding agencies) of \$2200, which offsets a portion of our expenses. More recently, two additional sets of authors have taken advantage of this new option, providing open access to last month's cover article on the physics behind the wormhole visualization in the movie *Interstellar*,⁵ and a forthcoming article on biomedical imaging and optical microscopy.⁶

Like most physics journals, AJP already had a so-called *green* open-access policy, in that we allow authors to post their articles on their own web sites and on e-print servers such as arXiv.⁷ More precisely, our standard copyright agreement⁸ allows authors to post copies of their author-prepared manuscripts on e-print servers and to post either author-prepared or final, published versions of their papers on their own (or their institutions') web sites. Based on a quick, informal sample, however, it appears that most AJP authors do not take advantage of this opportunity. Fewer than half of the articles in last month's issue are available on arXiv, and fewer still are posted on the authors' web sites.

Even when articles are posted for free access elsewhere, it is certainly more convenient for non-subscribers to be able to access articles directly from a journal's web site. Journals that always allow this are said to implement *gold* open access; an example is *Physical Review Special Topics—Physics Education Research* (PRST-PER), a joint venture of AAPT and the American Physical Society.⁹ Like most of the better gold open-access physics journals, PRST-PER is funded mainly by author-side fees. With our introduction of an open-access option this year, AJP becomes a *hybrid* open-access journal, with green open access for all articles that

authors choose to post elsewhere, and gold open access for articles whose authors have paid the optional fee.

AJP will not be switching to 100% gold open access in the foreseeable future, partly because many authors cannot afford to pay the open-access fee and partly because this fee covers only a fraction of our costs. Most of AJP's revenue comes from subscriptions and an increasing fraction of these subscriptions are online only.¹⁰ A 100% gold open-access policy would make online subscriptions superfluous and would thus necessitate a restructuring of how to fund the journal.

One occasionally hears the opinion that the intrinsic cost of online publishing is extremely low, and therefore all journals could implement gold open access at little or no cost to authors. Invariably, these opinions come from people who have never actually edited a high-quality academic journal. Even without printing and mailing hard copies, there are substantial costs associated with archiving and disseminating the content of a journal, evaluating manuscripts, managing the review process, copy-editing, formatting, and improving the quality of graphics. At AJP, we also work closely with authors to try to improve every article as much as possible, and this process can involve multiple rounds of detailed editing. All of these tasks take time and cost money.

Proponents of open access¹¹ have other valid points, however. A common argument¹² is that taxpayers often pay for academic research, through government grants and public university salaries, and therefore every taxpayer has a right to see the published articles that are the products of that research. Indeed, the National Institutes of Health (NIH) already requires¹³ that all research funded by NIH be publicly available no later than 12 months after the official date of publication. Following suit, the National Science Foundation recently announced plans to implement a similar requirement.¹⁴ Of course, most of the work published in AJP is not funded by these agencies, so these policies will have little direct effect on AJP.

Another argument^{12,15} is that open access will accelerate the pace of scientific discovery. In most fields of physics research, this goal has already been accomplished by the nearly universal use of arXiv (and, to a lesser extent, by the earlier practice of openly sharing preprints). Other disciplines have different traditions, however, and can perhaps benefit from earlier sharing of research results. In any case, AJP is not a frontier research journal and speed has never been our main goal.

Perhaps the best argument for open access, particularly for a journal like AJP, is that our authors undoubtedly want to reach as many readers as possible. At AJP, we take pride in the quality of writing and in the broad accessibility of what we publish, and this means that many AJP articles can benefit a significant number of readers who do not currently have subscription access. Among these readers would be most scientists and engineers working outside academia, high school teachers, journalists, and many others who are simply curious about physics. Reaching more of these readers will

promote the mission of our publisher, AAPT, an organization dedicated to “the advancement of the teaching of physics and the furtherance of an appreciation for the role of physics in our culture.”¹⁶

For this reason, AJP has taken another step toward open access. In addition to the occasional OA-designated papers, you may have noticed that all of the shorter-format (online) AJP articles are now marked with an F, meaning they are freely available via Scitation without a subscription by virtue of policy (and without any author-paid fee). Beginning in 2015 and moving forward, this free content includes Editorials, Letters to the Editor, Award articles, Notes and Discussions, and Book Reviews. Eventually, these journal sections (and some older, now-defunct sections) will become freely available in the archives as well, although this will be a labor-intensive process and we do not yet have a timeline for making it happen.

While this free content might technically reduce the incentive to subscribe to AJP, our hope is that subscribers will actually consider it a new reason to support AJP and AAPT. By joining AAPT and subscribing to its journals, you are helping to further our educational mission and advance the teaching and appreciation of physics throughout the world. Perhaps, if more physicists see value in this endeavor and choose to subscribe, AJP will have the resources to make more of its content freely available in the future.

David P. Jackson, *Editor*
Daniel V. Schroeder, *Associate Editor*

¹Scitation is run by the American Institute of Physics (AIP) and is the online home for their journals and conference proceedings, as well as those of AIP member societies, including AAPT. AJP is available on Scitation at <http://scitation.aip.org/content/aapt/journal/ajp>.

²If there's one journal that every college and university with a physics department in the country (perhaps the world) should subscribe to it is AJP. The journal's broad scope, educational focus, usefulness, and readability makes it an incredible resource for all physics faculty and many

physics students. If your institution does not subscribe to AJP, we urge you to contact your librarian immediately and do whatever it takes to start a subscription.

³J. Shulman *et al.*, “Experimental determination of circuit equations,” *Am. J. Phys.* **83**, 64–71 (2015).

⁴Creative Commons Attribution 3.0 Unported License, <http://creativecommons.org/licenses/by/3.0/>. See also the AAPT Author Agreement for Open Access, <http://ajp.dickinson.edu/Forms/OpenAccessAgreement.pdf>.

⁵O. James *et al.*, “Visualizing *Interstellar's* wormhole,” *Am. J. Phys.* **83**, 486–499 (2015).

⁶B. A. Scalettar and J. R. Abney, “Biomedical imaging in the undergraduate physics curriculum: Module on optical microscopy,” *Am. J. Phys.* (to be published).

⁷According to its web site, arXiv was started in 1991 (formerly at xxx.lanl.gov) and currently [arXiv.org](http://arxiv.org)) as “a highly-automated electronic archive and distribution server for research articles.” Initially consisting almost entirely of high-energy physics articles, arXiv now hosts more than a million articles covering all areas of physics (including physics education), plus mathematics, statistics, computer science, biology, and even finance.

⁸AAPT Copyright Transfer Agreement, <http://ajp.dickinson.edu/Forms/TransferCopyright.pdf>.

⁹Physical Review Special Topics—Physics Education Research, <http://journals.aps.org/prstper/>.

¹⁰While we respect the preferences of those who choose only online access, we count ourselves among the many AJP readers who still value the printed version. Perhaps printed journals are no longer needed for frontier research, where specialists look only at papers that pertain to their immediate research needs. But AJP is not a research journal; our goal is to publish articles that will be interesting and accessible to all physicists. Each AJP issue is also short enough to be browsed rather thoroughly in a single sitting. For this type of reading, print is still more convenient than pixels.

¹¹There is now a vast literature on open access. One thorough exposition by an early proponent is Peter Suber, *Open Access* (MIT Press, Cambridge, MA, 2012), <http://mitpress.mit.edu/books/open-access>.

¹²J. Tobochnik, “Editorial: Open access,” *Am. J. Phys.* **74**, 853–854 (2006).

¹³National Institutes of Health “Public Access Policy,” <https://publicaccess.nih.gov/>.

¹⁴National Science Foundation, “NSF's Public Access Plan: Today's Data, Tomorrow's Discoveries,” <http://www.nsf.gov/pubs/2015/nsf15052/nsf15052.pdf>.

¹⁵Scholarly Publishing and Academic Resources Coalition (SPARC), “Open Access,” <http://www.sparc.arl.org/issues/open-access>.

¹⁶AAPT Constitution, <http://aapt.org/aboutaapt/constitution.cfm>.