

S.779/HR.1477 - Fair Access to Science and Technology Research (FASTR) Act of 2015

Originally introduced in 2013 and re-introduced in March 2015 by Senators Cornyn (R-TX), Wyden (D-OR) and Representatives Doyle (D-PA), Yoder (R-KS), and Lofgren (D-CA) the **Fair Access to Science and Technology Research (FASTR) Act of 2015** is a bipartisan, improved iteration of open access¹ legislation termed the Federal Research Public Access Act (FRPAA) of 2006.

In February 2013 the White House issued a directive in response to a We the People petition, mandating that all federal science agencies with R&D budgets of \$100 million or more to provide the public with free online access to the results of that research. In February of 2015 the Department of Health and Human Services (HHS) issued guidelines on implementation of public access for the National Institutes of Health (NIH), Centers for Disease Control (CDC), Food and Drug Administration (FDA), and Agency for Healthcare Quality and Research (AHRQ). Legislative action is a critical next-step following the historic White House Directive, a milestone in affirming the public's right to access taxpayer-funded research; passage of FASTR would ensure access beyond the lifespan of one administration.

Highlights of the bill:

- Requires US government departments and agencies with annual research expenditures of more than \$100 million to make manuscripts of the resulting journal articles freely available over the Internet
- Mandates agencies develop implementation policies within 12 months of the bill's enactment, involving the establishment of stable digital repositories where manuscripts will be preserved, permitting free public access and productive reuse
- Stipulates a six-month "embargo period" meaning that each manuscript will be available to the public without charge within six months after it has been published in a peer-reviewed journal

Reasons why we like FASTR:

- Making government funded research accessible to the public ensures that taxpayers receive a fair return on their investment. The US invests more than \$60 billion annually on research, producing a large portion of all publications. Currently, taxpayers – including scientists, clinicians, students and patients – cannot readily retrieve research results paid for with their taxes.
- Improving online accessibility of scientific literature would:

¹ Open access (OA) refers to the free, immediate and unrestricted availability of high-quality, peer-reviewed scholarship over the internet, combined with the rights to use this information to its fullest possible extent as long as proper attribution to the original article is maintained. OA policies are compatible with existing intellectual property legal framework to protect interests of publishers, scientists, federal agencies and other stakeholders.

- allow the most cutting edge research findings to be integrated into medical education to better prepare future physicians for evidence-based practice and extend standards of care across the board to all medical centers;
 - accelerate technological advances and medical discovery by increasing the use and re-use of available research, ultimately improving the lives and welfare of patients around the world;
 - reduce health disparities by enabling physicians and trainees in rural and underserved communities in the US and abroad—where clinics and hospitals cannot afford expensive journal subscriptions—access to the most up-to-date clinical evidence essential to providing high quality care;
 - overcome traditional subscription-based access that locks students and faculty out from literature because libraries cannot afford the rising cost of subscription journals (ranging \$5,000-40,000 annual fees);
 - facilitate use of peer-reviewed evidence to guide clinical decision-making and self-education (Pubmed Central, the free digital archive of the NIH National Library of Medicine, hosts 500,000 unique users daily and is critical to our ability to locate vetted evidence for patient care)
 - level the playing field for researchers across institutions by creating opportunity to build on existing knowledge, development scientific careers and improve impact;
 - enhance students' ability to compete in the global marketplace and boost US biotechnology competitiveness.
- The amount of research made available would be greatly expanded as the bill includes ALL federal agencies with sufficient research outlays, building on the success of the NIH Public Access Policy which ensures that the public have access to published results of NIH funded research no later than 12 months after publication.
 - The bill also designates federal agencies as the appropriate stewards of centralized repositories for the publicly funded scholarly literature that informs clinical practice.
 - The shortened embargo period is an improvement on current policy (6 months rather than 12 months). For medical students, ANY EMBARGO period is problematic in the context of teaching facilities where commonly managed medical problems, from strokes to sepsis, are under active research. An embargo period excludes the latest information that would otherwise be available, forcing us to rely on outdated data, impeding exchange of best practices, diminishing our ability to self-educate, and threatening patients' right to receive proper clinical care and recommendations based on latest medical evidence.

About the American Medical Student Association

AMSA is the oldest and largest independent association of physicians-in-training in the United States. Founded in 1950, AMSA is a student-governed, non-profit organization committed to representing the concerns of physicians-in-training. To learn more about AMSA please visit us online at www.amsa.org/.

1) What does the legislation entail?

The bipartisan Fair Access to Sciences and Technology Research Act would require that US Government departments and agencies with annual extramural research expenditures of over \$100 million make manuscripts of journal articles stemming from research funded by that agency publicly available over the Internet. The manuscripts will be preserved in a digital archive maintained by that agency or in another suitable repository that permits free public access, interoperability, and long-term preservation. Each manuscript will be available to users without charge within six months after it has been published in a peer-reviewed journal.

3) What does the legislation mean for investigators?

If Congress passes the bill into law, the most significant day-to-day effect on investigators will be *improved access* to research and *increased impact* for their own work. A growing number of studies demonstrate that research is cited more often when it is openly accessible on the Web.⁽¹⁾

Additionally, by calling for agencies to enable productive reuse terms for these articles, FASTR will give researchers the opportunity to begin to use digital articles in new and innovative ways, including applying new computational analysis, text mining and data mining tools and techniques that have the potential to revolutionize the scientific research process.

4) What should investigators expect to be asked to do to comply?

Agency implementation policies would call for each principal investigator whose work is funded totally or partially by the agency to submit an electronic copy of the final manuscript (including changes resulting from peer review) of any article that stems from the agency's funding and has been accepted for publication in a peer-reviewed journal. With the consent of the article's publisher, the final manuscript could be replaced with the final published version. Some agencies may work out arrangements with publishers allowing publishers to deposit articles on behalf of investigators.

The process by which investigators deposit their work is expected to be relatively simple; and agencies are encouraged to coordinate their deposit procedures. It may be similar to the procedure worked out by the National Institutes of Health to implement its mandatory [Public Access Policy](#). NIH estimates that submitting a manuscript to their archive usually takes an investigator just 3–10 minutes.

Like NIH, other agencies might choose to use the article deposit process as an alternate means by which investigators can fulfill any existing requirement to provide publications as part of progress reports and other application and closeout procedures. This could reduce the burden for investigators.

5) What does it mean for higher education institutions?

This legislation will mean enhanced access to federally-funded research articles for researchers and students at your institution. Availability of federally funded research in open archives also expands the worldwide visibility of the research conducted at your institution, increases the impact of your investment in this research, and aids you in examining related work at other institutions that compete for government grants and contracts.

6) Why is this legislation needed?

In scholarship, discovery is a cumulative process – new knowledge builds on earlier findings. Because broad, timely sharing of research fuels this ongoing process, the Internet offers an unprecedented and cost-effective means to accelerate scientific advancement, and to apply new computational analysis techniques to further fuel discovery and spur innovation. The bill recognizes this potential and helps facilitate its realization. Its key beneficiaries include:

- *Scientists and scholars*, whose research will be more broadly read and who will have fewer barriers to obtaining the research they need.
- *Taxpayers*, who will obtain economic and social benefits from having their collective investment in scientific research more fully leveraged, resulting in enhanced technology transfer, broader application of research to health care provision, and more informed policy development.
- *Businesses*, especially small businesses and start-ups, which will gain timely and affordable access to findings and ideas that can fuel innovation, and lead to the creation of new products and services.

- *Students*, who will gain much broader access to research crucial for their education and professional development.
- *Funders*, who will gain from accelerated discovery, facilitation of interdisciplinary research methodologies, preservation of vital research findings, and an improved capacity to manage their research portfolios.

7) Couldn't agencies do this without legislative action?

Yes, but – with the exception of the National Institutes of Health, which has had a mandatory policy since 2008 – none have done so. Posting of manuscripts stemming from agency grants or contracts falls squarely within their rights and does not impinge upon the author's copyright. Nevertheless, some publishers have challenged the right of federal agencies to implement public access policies, which may discourage or inhibit agency action.

In introducing this legislation, the Sponsors have sought to break the logjam, recognize the taxpayers' interest in wider use and application of publicly funded scientific research, and promote a more open government.

8) Is the legislation a threat to journals and the peer review they perform?

No. The Fair Access to Science and Technology Research Act contains two key provisions that protect journals and the peer review process:

- A delay of up to six months in requiring free access to the articles (versus immediate access for journal readers).
- Inclusion in the public archive of the author's final manuscript rather than the publisher's formatted, paginated version preferred for citation purposes.

In some disciplines, freely accessible online archives have been proven to boost journal readership, not detract from it. In physics, for example, where nearly 100% of new articles are freely available from birth in the arXiv.org open-access archive created more than a decade ago with US Department of Energy funding, subscription-based journals have continued to thrive. In a report to Congress on the results of its Public Access Policy, NIH reported that it "has no evidence to indicate that the Policy has had any impact on peer review." (2)

Just as newspaper articles today are read in print form, on their publishers' Web sites, and in aggregations such as LexisNexis®, potential readers of publicly funded journal articles are well-served by having them accessible in many forms and contexts for differing uses. Even before the Internet, publishers flourished at the same time public libraries provided citizens with free access to their publications.

9) Will the availability of multiple versions of an article create problems?

This issue has been effectively addressed by such popular digital archives as arXiv.org and NIH's PubMed Central. Libraries, funders, standards organizations, and technology companies are already working together to ensure that research discovery, citation, and impact measurement are preserved and that the full potential of greater access and impact is achieved.

10) Will this legislation take funding away from research?

Not to any material extent. The National Institutes of Health, for example, estimates that the cost of its public access program would be \$4.2 million if 100% of the 90,000 eligible manuscripts were deposited annually. That is a tiny fraction (about 0.01%) of the agency's \$30 billion budget. The reality is that sharing of research results is part of the research process. Faster and wider sharing of research fuels further advances.

Does this legislation affect materials other than peer-reviewed articles?

No. It does *not*, for example, apply to:

- Laboratory notes, preliminary data analyses, author notes, phone logs, or other information used to produce the final manuscript.

- Classified research, research that results in works that generate revenue or royalties for the author (such as books), or patentable discoveries to the extent necessary to protect copyright or a patent.
- Works that are not accepted for journal publication

11) Does this legislation affect copyright or patent laws?

No, the legislation explicitly recognizes and upholds the principles of copyright and patent law. As part of the granting or contracting process, the funding agency will secure a non-exclusive license to disseminate the manuscript, but this has no impact on the disposition of copyright or patent rights. However, in the near term, investigators may need to adjust the copyright transfer agreements they sign with many publishers to avoid transferring exclusive rights to them. Longer term, it seems likely that publishers will adjust their agreements. In any event, the government's license precedes any such copyright transfer and so would override it.