

## Embargoes and Federally Funded Research

by Stephen Arougheti

### Abstract:

*Limiting the immediate access to content, embargoes are designed by publishers to ensure the economic sustainability of their business by requiring users to rely on the purchase of licensing agreements via subscription models. Comparatively, Open Access models which eliminate traditional pay-walls, are gaining prominence for immediate access and reduction of copyright barriers between readers and articles. Wishing to facilitate expanded access to scientific research, the White House sought to implement policy for the timely release of government funded research to the public. For proponents of Open Access, legislation by the House of Representatives in the FIRST Act imposed significant barriers to the public's timely access of government funded research. Alongside rising subscription costs and increasing advocacy for Open Access, recent actions by the United States and European Union to reduce embargo periods for scientific research have brought to the forefront questions of properly defining the duration of embargoes for publicly funded research.*

Federally funded research fosters social progress by encouraging innovation and promoting economic growth. It is the precise nature of federal funding to address specific concerns of vital importance to society (e.g. defense, energy, and health) that leads proponents of Open Access to advocate for policies granting the public access to federally funded research in a timely manner and through an infrastructure designed to facilitate maximum access. A [memorandum](#) released on 22 February 2013 from the Office of the President outlined and directed federal agencies (contributing in excess of \$100 million annually for research and development) to develop a strategy supporting public access to peer-reviewed publications and research data that received support from taxpayers.<sup>[1]</sup> Principal to the administration's objective is the creation of an Open Access policy that balances competing interests with suitable embargo periods. Unconstrained access to new research energizes innovation through novel insights and is balanced against preserving the commercial interests of publishers for the continuance of the "valuable services...that are essential for ensuring the high quality and integrity of many scholarly publications."<sup>[2]</sup> On 10 March 2014 Rep. Larry Bucshon introduced [H.R. 4186](#), *Frontiers in Innovation, Research, Science and Technology (FIRST)* to the U.S. House of Representatives.<sup>[3]</sup> Eliciting [reproach](#) from academic libraries and advocacy organizations, Section 303 of the legislation establishes a restrictive set of embargoes and undercuts White House efforts to create a policy for the timely release of information.<sup>[4]</sup>

FIRST establishes an embargo period of 24 months after publication (with an option for a 12 month extension when warranted) for peer-reviewed articles and 60 days for the supporting data. After expiration of the embargo, the information becomes accessible online to the public at no cost. Comparatively, the White House recommendation sets a maximum embargo period of 12 months. While each government body sets drastically opposing recommendations, both recognize the unique nature of various government agencies, granting latitude for agency directors to tailor embargo periods to the varying subject material involved.

[Commissioned](#) by the American Association of Publishers, Philip Davis sought to quantify article usage and create a measurable formula for determining a suitable embargo period.<sup>[5]</sup> Examining the half-life of article downloads (the duration necessary for an article to receive half of its lifetime downloads) the research seeks to empirically identify usage patterns for the life of an article. Categorized by subject area and demonstrating substantial variation, Davis outlines the extensive nature in which articles continue to be downloaded years after publication. The study identifies the long-term value research retains and an expansive variation to article half-life amongst distinct fields; with 3% of journals possessing a half-life shorter than twelve months and 17% exceeding six years. Such variance offers credence to the publishing community's petition for unique embargo periods defined by subject and of sufficient duration to protect the long-term value of the research.

The federal government's [support](#) for research and development in FY2013 equaled \$140.820 billion.<sup>[6]</sup> According to a Congressional Research Services Report dated October 2012, universities are the principal recipient of federal funding and reliant on the government for [60% of \\$51.9 billion](#) spent on research and development in FY2008.<sup>[7]</sup> Universities depend on federal resources to produce scholarship which is expected to directly influence local and national economies. According to the same October 2012 report to Congress:

It has been shown that academic research is integrated into the economy and impacts at both the local and national level. By one estimate, approximately 80% of leading industries have resulted from research conducted at colleges and universities.<sup>[8]</sup>

Considering the economic impact academic research provides and recognizing the need to maintain a global competitive balance, the United States' determination in establishing an embargo period should correlate to standards set by other countries. [Horizon 2020](#), a European Union initiative created to secure EU global competitiveness, established an embargo period of six months for STEM articles and twelve months for those in the humanities and social sciences.<sup>[9]</sup> It is imperative that Congress recognize global trends and enact legislation which preserves American competitiveness in research and development while fostering economic growth.

When designing a model to grant the public timely access to research and data there is the question of consequences for publishers. Publishers argue that interference by the government in limiting embargo periods incentivizes libraries to terminate subscriptions, thereby reducing the revenue necessary to survive. A [study](#) by the UK Parliament conceded a lack of evidence that short embargoes negatively impact publisher subscriptions, but noted:

Evidence from the field of high energy physics shows that despite nearly 100% immediate, unembargoed deposit, subscriptions have not been damaged. The 4 million EU funded PEER (Publishing and the Ecology of European Research) project (2012) showed that traffic to journal websites increased when articles were made available through a publicly accessible repository, possibly because interest grew as articles were disseminated more widely.<sup>[10]</sup>

How imposed restrictions on embargo periods will impact publishers and the public is an issue requiring careful attention and will influence future legislation. To its benefit, the FIRST Act mandates an evaluation of policy and procedure every five years to assess success and failures. It serves policy-makers well to refine legislation as further information becomes available within the evolving area of Open Access and scholarly publishing.

While the polarizing interests of publishers and libraries tend to focus attention on the divisive issue of embargoes, there are an abundance of concerns which will determine public access to research and data. How will the metadata schemes be designed to ensure information is archived and searchable? How will intellectual property rights be protected? How will the long-term preservation of digitally formatted information be ensured? The questions are not new, but the government's prerogative to guarantee Open Access to federally funded research serves to illustrate the challenges, as well as political hurdles, to implementing such a massive repository of publications and digital data.

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<sup>[1]</sup> John P. Holdren, "Increasing Access to the Results of Federally Funded Scientific Research," *Executive Office of the President--Office of Science and Technology Policy*, last modified February 22, 2013, [www.whitehouse.gov/sites/default/files/microsites/ostp/ostp\\_public\\_access\\_memo\\_2013.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf).

<sup>[2]</sup> Ibid.

<sup>[3]</sup> Larry Bucshon, "H.R. 4186 - FIRST Act of 2014" *U.S. Congress*, last modified March 10, 2014, <https://www.congress.gov/bill/113th-congress/house-bill/4186/all-actions/>.

<sup>[4]</sup> "Letter to House Science Committee in Opposition of Section 303 in the FIRST Act," *Scholarly Publishing and Academic Resources Coalition*, last modified

March 24, 2014, <http://www.sparc.arl.org/news/letter-house-science-committee-opposition-section-303-first-act>.

[5] Philip M. Davis, "Journal Usage Half-Life," *The Association of American Publishers*, last modified November 25, 2013, [www.publishers.org/\\_attachments/docs/journalusagehalflife.pdf](http://www.publishers.org/_attachments/docs/journalusagehalflife.pdf).

[6] John F. Sargent Jr., "Federal Research and Development Funding: FY2013," *Congressional Research Service*, last modified December 5, 2013, [www.fas.org/sgp/crs/misc/R42410.pdf](http://www.fas.org/sgp/crs/misc/R42410.pdf).

[7] Christine M. Matthews, "Federal Support for Academic Research," *Congressional Research Service*, last modified October 18, 2012, [www.fas.org/sgp/crs/misc/R41895.pdf](http://www.fas.org/sgp/crs/misc/R41895.pdf).

[8] *Ibid.*

[9] "Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020," *European Commission*, last modified December 16, 2013, [ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/oa\\_pilot/h2020-hi-oa-pilot-guide\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf).

[10] "The Transition to Open Access: Costs and Hidden costs," *UK Parliament*, last modified September 10, 2013, <http://www.publications.parliament.uk/pa/cm201314/cmselect/cmbis/99/9907.htm>.