

# Scholarly Communication: a Lament and a Call for Change

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Charles B. Lowry, Ph.D.

We are all familiar with the current scholarly communication landscape, but dramatizing the implicit contradictions will point to a “path forward” and point to some remedies. I cannot help but oversimplify this complex landscape. Were it possible for the academy to design a scholarly communication system from scratch, it would not resemble the one we have today, except for two features—it would employ a scheme of vetting for quality, and it would emphasize the value of openness in support of the exchange of scholarly information. The present publishing system is suffering from entropy and is badly endangered.

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Even ten years ago, this discussion would have been considerably different than today, when we are entering the final stages of a revolution in how we transmit the results of research scholarship and how we look at the full life cycle of scholarly output. The main shift is format transition, illustrated by Reed-Elsevier data. In 2000, 64 percent of its income was derived from print formats, and 22 percent from electronic. That, by 2011, had reversed.<sup>1</sup> In simplest terms, there are three separate systems that interact with, but are independent of, one another. They are badly out of sync internally and in the ways they interact. This essay reviews key issues in all three areas—copyright, publishing, and research universities—and outlines potential steps toward achieving a new system.

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## Intellectual Property—Law and Practice

It is within the legal and legislative intellectual property landscape that we find one of the cornerstones of the current conflicts in the scholarly communication system. Research institutions devote minimal resources to either managing the ownership of their copyright intellectual property or to fully exercising their right to educational fair use. By contrast, efforts to maximize the value of copyrights transferred to publishers by researchers is tenacious and relentless and backed by large resources. In particular, we find that actors interested in this side of the equation use several strategies to increase profits. Some come readily to mind:

- Lobbying aimed at legislation to increase the profitability of copyrights at the expense of use;
- The threat of legal action to dampen legal uses and stimulate alternative methods of access that create new profit streams; and
- Lawsuits aimed at minimizing legitimate and legal practices of educational fair use with the full range of legal imagination to find innovative ways to create infringement where there is none.

How do these strategies manifest themselves? Trying to recount the history is not possible here. But some examples are worth considering as a prelude to suggesting how these strategies differ from the values of research scholars and the academy, in general, and my view that it is past time for us to reclaim control of the intellectual property created by academic research.

First, the system of intellectual property law has evolved through legislation and practice to comprehend fundamentally different and, really, contradictory purposes. I am going to ignore patents and trademarks and confine myself to U. S. copyright, for which the original term fixed by Congress in 1790 was 14 years, after which these works passed into the public domain. There have been four extensions of the copyright term

in the last two centuries, and not one was the result of the efforts on the consumer side. To appreciate the imbalance in the way legislation and legal decisions have evolved, it is very important to keep in mind the original wording of Article I of the U.S. Constitution, which established federal authority over copyrights.

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of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”<sup>2</sup> It seems pretty clear that the purpose of granting limited copyrights was not to ensure profits but to ensure the advancement of knowledge, in other words, the “common good.” At least that is what James Madison and other founders explicitly had in mind. The “Copyright Clause is the only clause granting power to Congress for which the means to accomplish its stated purpose are specifically provided. The exact limitations of this clause have been defined through a number of United States Supreme Court cases interpreting the text.

For example, the Court has determined that because the purpose of the clause is to stimulate development of the works it protects, its application cannot result in inhibiting such progress. However, there has been a countervailing strain in the courts that has promoted a varying view.<sup>3</sup> Mike Masnick recently addressed this latter view in a well reasoned post on his *techdirt* blog:

I have trouble understanding why so many people—especially those employed as IP lawyers—have so much trouble separating out *the purpose* from *the method* [of the Constitution’s copyright clause]. Yes, the clause grants the power to Congress to create copyright law—but for a specific purpose: “to promote the progress of science.” Nowhere does it suggest, nor even hint at, the idea that copyright’s purpose is to benefit creators. Rather, that is *the method*. So, to claim that the protections of the author are greater than or even equal to the benefits to the nation, is a clear flip-flopping of the method with the purpose. Of course, in doing so, it not only flip flops the method and the purpose, but it completely distorts the nature of copyright law, and leads to maximalist-style positions, where absolutely no consideration is given to how the public benefits (or, more importantly, is hurt) from specific changes to copyright law.<sup>4</sup>

What has Congress done to exercise this authority? Most recently, the 1998 act extended the term of copyright to life of the author plus 70 years; and for works of corporate authorship, it extended it to 120 years after creation or 95 years after publication, whichever endpoint is earlier. This law, also known as the *Sonny Bono Copyright Term Extension Act*, or pejoratively as the *Mickey Mouse Protection Act*, effectively “froze” the advancement date of the public domain in the United States for works covered by the older fixed-term copyright rules. The entertainment industry lobbied heavily in favor of this extension, and when the legal challenge to the legislation came to the high court in *Eldred v Ashcroft* (2003), it was upheld. The plaintiffs had argued that the act in effect created a “perpetual copyright” rather than the limited one defined by the Constitution.<sup>5</sup>

Similarly, early in 2012 the Supreme Court struck a blow against the public domain in *Golan v Holder*. The case involved the 1994 law in which Congress extended protec-

tion to non-US music content already in the public domain. The law’s challengers complained that community orchestras, academics, and others who rely on works that are available for free have effectively been priced out of performing “Peter and the Wolf” and other pieces that had been mainstays of their repertoires. As Jonathan Band has said, the

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**The point is simple—the copyright protection term given to commercial interests by the 1998 act makes absolute sense for the entertainment industry. For the exchange of scholarly information, however, this is an absurdly long term that detracts from the fundamental values of our community for the widest possible dissemination of the products of research, particularly given the practices in the academy concerning copyrights.**

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“majority opinion in *Golan* closes the door on constitutional challenges to copyright statutes unless those statutes contain absolutely no time limits



or directly undermine the idea/expression dichotomy or fair use." On the other hand, the reasoning underlying the majority opinion is equivalent to reading "the Copyright Clause as if it were a blank check made out in favor of those who are not themselves creators."<sup>6</sup> Given all this, is there any limit that the Supreme Court would recognize to the Congressional power to create private ownership through copyrights? Do we need to be concerned that Congress might in the future extend copyright to scientific data and award it to private entities? The dissent in *Golan* certainly raised this issue.

Turning back to the issue of copyright term, 95 years is better than forever, but—for the purposes of academic scholarship—not much. The point is simple—the copyright protection term given to commercial interests by the 1998 act makes absolute sense for the entertainment industry. For the exchange of scholarly information, however, this is an absurdly long term that detracts from the fundamental values of our community for the widest possible dissemination of the products of research, particularly given the practices in the academy concerning copyrights.

Term is but one of a set of complicated issues that includes a far longer list—fair use, first sale doctrine, educational use, library exceptions, the idea versus expression dichotomy, compilations and sweat of the brow doctrine, and transformative use, not to mention the differences between copyright for media and print, a distinction that is blurring in the world of networked information. There is usually no more than one person on our campuses able to speak intelligently about this complex legal environment. What should we advise faculty who want to share research and use it in the classroom, or students who want to use copyrighted materials for purposes of entertainment and

education? Asking them to become copyright experts is certainly not the answer.

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history of attempts at restrictive legislation. ARL and SPARC, as well as the American Library Association and the Association of College and Research Libraries, are deeply engaged in policy and advocacy in their efforts to protect access to scholarly and governmental information and the rights of teachers, students, and the reading public. The K-Street mentality in Washington means we must be constantly vigilant while the lobbyists push Congress to pass special interest legislation that harms these rights. Someone is always up to mischief or worse and a few examples come to mind.

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### **Whereas the sponsors of the bill insist that the only targets are rogue foreign sites guilty of online piracy and counterfeiting, a close reading of the proposed legislation reveals that it is overbroad and potentially harmful.**

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Among the policy issues that concern ARL are ensuring that legal use and access to the Internet are protected. At times, that puts us in a very different place than content providers. For instance, there are two current pieces of legislation that have required

our attention and both are aimed at curbing online piracy—the House *Stop Online Piracy Act* and the Senate *Protect IP Act*. Whereas the sponsors of the bill insist that the only targets are rogue foreign sites guilty of online piracy and counterfeiting, a close reading of the proposed legislation reveals that it is overbroad and potentially harmful. Two provisions of *SOPA*—the definition of “willfulness” and the expansion of criminal penalties to public performances—are, at best, very troubling. There are differences between the House and Senate acts, but if either were law, there is a high likelihood in the present environment that we would see an increase in the use of the courts to threaten libraries, based on conflating “fair use” and “willful infringement.”<sup>7</sup> There are other issues at stake, not the least of which are over-reaching regulatory provisions allowing for domain blocking and thus threatening the basic structure of the open Internet.

Sadly, pointing out such significant flaws in proposed legislation inspires some supporters and legislators to charge that we do not understand the legislation or IP piracy when, in fact, the behavior of libraries has been overly fastidious at times in establishing core practice that protect IP. Fortunately, it appears that these two ill-conceived legislative proposals have been turned back by the “dark” Internet protest campaign of January 18, 2012, led by tech companies like Wikipedia, Google, and Craigslist. Many co-sponsors of the bills distanced themselves quickly.<sup>8</sup> Proponents of a more restrained and rational approach hope that “the slowed momentum of *SOPA* and *PIPA* may allow Congress to consider an alternative proposal, the *OPEN Act*, which critics of *SOPA* and *PIPA* have suggested may provide a less controversial way to address foreign-based websites that infringe copyright and trademark.”<sup>9</sup>

On the legislative front, we have also seen a continued assault on the public access to government-funded research. Is there any more reasonable requirement for spending tax dollars on research than that it should be freely available to taxpayers? Yet, in December 2011, just before the Congressional recess, the rhetorically named *Research Works Act* (H.R.3699) was introduced into the U.S. House of Representatives, “designed,” as Heather Joseph puts it, “to roll back the NIH Public Access Policy and block the development of similar policies at other federal agencies.”<sup>10</sup> Not surprisingly, the Association of American Publishers (AAP) came out strongly in support of the legislation, stating in the usual overblown rhetoric that:

The legislation is aimed at preventing regulatory interference with private-sector research publishers in the production, peer review, and publication of scientific, medical, technical, humanities, legal, and scholarly journal articles. This sector represents tens of thousands of articles which report on, analyze, and interpret original research; more than 30,000 U.S. workers; and millions of dollars invested by publishers in staff, editorial, technological, capital, and operational funding of independent peer review by specialized experts. North American-based science journal publishers alone account for 45 percent of all peer-reviewed papers published annually for researchers worldwide.<sup>11</sup>

It is pure spin to say that the publishing “sector represents tens of thousands of articles” and by so doing, to imply that articles are people who are being protected. The job statistics AAP advanced are impressive, if unfounded. A recent report from the U.S. Department of Commerce offers metrics that at first glance seem to support the broad claims made by the AAP, but a bit of analysis is warranted. In making the



announcement of the study, Victoria Espinel, U.S. Intellectual Property Enforcement Coordinator, Executive Office of the President stated that the report included “the full range of sectors that generate intellectual property, as well as the jobs, exports, and wage premiums those sectors support.... As the study shows, intellectual property is a key driver of our economy. The report found that IP-intensive industries create 27.1 million jobs and indirectly support another 12.9 million jobs. All told, nearly 30 percent of all U.S. jobs are directly or indirectly attributable to the IP-intensive industries.”<sup>12</sup> The use of the phrase “full range of sectors” is telling. The report is so hopelessly inclusive that virtually every economic activity seems to be touched on. A chief criticism of the report is that it is totally without nuance and, therefore, of little use in thinking about how copyright affects the economy. There are three sections on IP, including patents, trademarks, and copyright. But interest here is on the section on “Copyright-Intensive Industries” that includes the following:

- Newspaper, periodical, book, and directory publishers
- Software publishers
- Motion picture and video industries
- Sound recording industries
- Radio and television broadcasting
- Cable and other subscription programming
- Other information services (news syndicates and Internet sites)
- Specialized design services (visual and graphic arts)
- Computer systems design and related services (software and databases)
- Advertising, public relations, and related services
- Other professional, scientific, and technical services (photography and translation)
- Performing arts companies
- Independent artists, writers, and performers<sup>13</sup>

What is missing? Plainly a distinction between economic activity benefiting from the copyright monopoly and that of fair use. The report mentions the term fair use but

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twice, repeating the same sentence: “Importantly, using IP [rights] to support innovation and creativity means recognizing the public domain and limits such as fair use which balance the public’s right to use content legally with IP owners’ interests.”<sup>14</sup> The report is heavy on enforcement and light on use. A bit of clarity can be found by reading an of the reports from the Computer and Communications Association. For instance,

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CCIA commissioned the study conducted using publicly available government data and World Intellectual Property Organization methodology. It found companies benefiting from limitations on copyright-





holders' exclusive rights, such as 'fair use' - generated revenue of \$4.7 trillion in 2007—a 36 percent increase over 2002 revenue of \$3.4 trillion. The most significant growth over this period was in Internet publishing and broadcasting, web search portals, electronic shopping, electronic auctions, and other financial investment activity.<sup>15</sup>

More important, though, is that the federal government is not interfering with private sector publications as AAP asserted. Instead, it is requiring scholars—as a condition of the grant funding for their research, funding that is to serve the public interest—to post the results of that research. The AAP does not seem concerned in the least about the tens of millions of dollars invested by research institutions in scientific infrastructure, staffing, and the libraries that, in the end, pay the price for the privatizing of the results of research scholarship that must then be purchased in the form of high-priced and often bundled journals. The proposed legislation is a plain attempt, supported by commercial interests, to ensure that their profits trump the public interest. The IP arguments for it are totally specious and another example of the willingness to socialize the cost of research and privatize the profits. Michael Eisen put it best in responding in a *New York Times* op-ed:

Rather than rolling back public access, Congress should move to enshrine a simple principle in United States law: if taxpayers paid for it, they own it. This is already the case for scientific papers published by researchers at the N.I.H. campus in Bethesda, MD, whose work, as government employees, has been explicitly excluded from copyright protection since 1976. It would be easy to extend this coverage to all works funded by the federal government.<sup>16</sup>

AAP apparently did not bother to ask its own members whether they agreed with its public stance; and, within a few days, many non-profit AAP members and various open access (OA) advocates stated their own opposition to the *Research Works Act*. It is notable that they were joined in this opposition by the prestigious *Nature* Publishing Group and *Digital Science*.<sup>17</sup> On the other hand, the AAP has continued to aggressively oppose the Federal Research Public Access Act (FRPAA). With the recent re-introduction of FRPAA legislation in both houses of Congress, AAP cranked up its PR machine and really went out on a limb stating, "FRPAA is little more than an attempt at intellectual eminent domain, but without fair compensation to authors and publishers."<sup>18</sup> One might ask—when did these publishers ever pay authors a penny? They may not want to go there. More on FRPAA later.

Even Elsevier, after several months of rising opposition, but still trying to have it both ways, stated that "while we continue to oppose government mandates in this area, Elsevier is withdrawing support for the *Research Works Act* itself. We hope this will address some of the concerns expressed and help create a less heated and more productive climate for our ongoing discussions with research funders."<sup>19</sup> Obviously, the boycott of Elsevier instigated by UK mathematician Thomas Gowers had an impact. Given that the sponsors withdrew the *RWA* almost simultaneously, Elsevier was not making much of a statement.<sup>20</sup> Given the power of

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commercial lobbying, I predict that this Zombie legislation is not dead and will find a way back onto the agenda.

Let me turn now to the question of litigation. The use of legal intimidation has a fairly long history, going back at least as far as the infamous attempts by Gordon and Breach in its various suits against the American Institute of Physics (AIP) and American Physical Society (APS), to stop their use of the results of H. H. Barschall's analysis of physics journal cost beginning with his 1986 article.<sup>21</sup> Barschall's research concluded that Gordon and Breach journals were by far the most expensive and least cost-effective in the survey. According to the AIP, this case

is of wide interest to those who care about the creation and diffusion of scientific journals. In its assertions, arguments, and counterarguments can be found a microcosm of all the issues that plague scientists, librarians, and information producers at the end of this millennium. It is a rich trove of primary information provided for members of the academic and legal communities and the citizenry who are interested in the values and diffusion of scientific and scholarly communications against the backdrop of the 20th century marketplace.<sup>22</sup>

Gordon and Breach brought suits wherever it could get a hearing, creating a sort of international double jeopardy. Ultimately, this aggressive and frankly disingenuous attempt at legal intimidation failed when the AIP and APS were upheld by courts in Germany, Switzerland, the U.S., and finally in France, following twelve years of challenges to it by Gordon and Breach Publishers.<sup>23</sup> On the other hand, the cost to the AIP and APS was considerable.

The frequency and aggressiveness of the use of the threat of litigation is accelerating. A recent example of the use of legal intimidation is the rolling efforts of the Association of American Publishers to limit the use of e-reserves, long a staple of academic library offerings, by insisting on "black letter law" interpretations that, in essence, say—if a library does not have explicit permission for this use, then it is illegal. The AAP argument is that, notwithstanding fair use, a library cannot post articles from a journal to which it subscribes or any portions of a book that it purchased. This strategy first surfaced in 2003 when AAP wrote demanding University of California San Diego take action against purported illegal e-reserve activities.<sup>24</sup> UCSD was vigorous in asserting that it was within legal fair use practices, and this incident never developed beyond the exchange of letters and press releases, whereas things went a bit further at Cornell. In 2007, AAP made a similar approach to Cornell. The university responded with a revision of its e-reserves policy, one that arguably made a strong stance for fair use.<sup>25</sup> Interestingly, the AAP's Pat Schroeder praised the Cornell "guidelines" and touted it as a path forward, while backing away from the threat of litigation.<sup>26</sup> Whereas UCSD is a state institution protected in some measure by the "sovereign immunity" defense of a state, Cornell has a dual status and is exposed legally in that regard. The implied threat of a suit meant that Cornell was under some coercion in the "negotiation."

The AAP got serious in pushing its perspective in 2008, crossing the Rubicon, by funding half the cost for litigation by Sage, Cambridge, and Oxford presses against Georgia State University. The Copyright Clearance Center (CCC) abandoned all appearances of neutrality by funding the other half while making claims that its "blanket license" could



protect the whole campus from infringement. It is a totally bogus claim—or more politely a fig leaf—that would not have protected Georgia State from being sued. The plaintiffs sought injunctive relief, but not monetary damages. In this instance, they attempted to evade the “sovereign immunity” defense by suing university officers—that is, people, not the institution.<sup>27</sup> Georgia State took the preemptive step of reviewing the e-reserves policy in light of practices elsewhere and modifying it. As previously observed, AAP had backed away from litigation with Cornell, but not this time. This brinkmanship is puzzling. While the policies are different in many ways, each at its core uses a balancing of the four factors, facilitated by a checklist, as a determination of fair use. Indeed, Georgia State argued that CCC had posted the “fair use checklist” on its own website prior to the suit. Infer what you will about their consistency. As of now, it seems that the plaintiffs have largely been rebuffed. Without getting into the legal weeds, in 2010, the judge in the case dismissed two of the claims based on “direct liability” and “vicarious liability,” and narrowed those on the third “contributory liability” in a way that seems likely to benefit the university. In December 2010, the judge partially reinstated the “direct liability” claim.<sup>28</sup> The ruling in the case was handed down as this article went to press, so that a full assessment of its impact is not possible here. However, Professor James Grimmelman, a well-known copyright authority, states quite plainly in a fairly detailed analysis that the “bottom line on the case is that it’s mostly a win for Georgia State and mostly a loss for the publishers.”<sup>29</sup>

Beginning in 2010, a number of public ARL members have received letters from a Boston law firm retained by the International Association of Scientific, Technical, and Medical Publishers (STM) that focus on purported illegal interlibrary loan (ILL) and document delivery services. They implied a threat of legal action if such services between US and non-US libraries did not cease. This attempt to limit legitimate practice occasioned the publication of the ARL “Report of the Task Force on International Interlibrary Loan and Document Delivery Practices.” This report, based as it was on a thorough review of historic practice and law, affirmed the right of libraries to participate in international ILL, stating that ILL “is a well-

established practice in libraries in many countries. The Berne Convention and other international copyright agreements do not specify any standards for ILL thus nations have considerable discretion about the terms of allowable reproduction and distribution.”<sup>30</sup>

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The findings of the report vigorously support this activity and provide the best practices for conducting it. The report also addresses the emerging problems in such ILL and document exchange that are occasioned by the increasing use of licenses as a surrogate for subscriptions.<sup>31</sup>

It seems clear that STM is developing a broad strategy to produce increased income and to install what can only be viewed as tight control over international ILL. We have the recent dramatic changes in the requirements to borrow from British Library (BL) as a prime example. In January 2012, BL replaced its borrowing service with the International Non-Commercial Document Supply (INCD) service that is a direct result of a new licensing framework with STM and the Publishers Association in the UK. The INCD increases the documentation burden of compliance for libraries and installs a totally new set of requirements for users to sign declarations about their use. One outcome of making BL

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delivery practice more complex and onerous may be to incline libraries to borrow through the new CCC Get It Now service. STM surely understands this. Barbara Quint points out that besides the onerous new documentation for libraries and their patrons, fees “for the INCD service will be the standard BL fee plus

the appropriate publisher royalty fee. Any order fulfilled using the 24-hour service will attract the full commercial fee.”<sup>32</sup> Success with the BL will embolden STM to press this strategy in other ways.

The litigation most in the news in recent years remains the *Google Book Case*. The particulars are so well known they hardly require repeating, except to establish the timeline. In 2004, Google, working principally with ARL libraries, began a scanning project to massively digitize most everything in these collections. The purpose of the original Google Book project—to use copyright lingo—was to create a transformative work that would provide an index to the world’s book knowledge, certainly a worthy goal. In 2005, they were sued by groups of publishers and authors. In 2008, a settlement was announced. In 2011, the judge rejected the expansive settlement, stating in his ruling, “Indeed, the ASA [the agreement] would give Google a significant advantage over competitors, rewarding it for engaging in wholesale copying of copyrighted works without permission, while releasing claims well beyond those presented in the case.”

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### **Given the Congressional propensity to inaction and gridlock, we may expect clarification of the status of orphan works when “hell freezes over.”**

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Key criticisms revolved around the settlement’s opt-out provisions and the presumed monopoly over orphan works that it gave Google and the other parties. The suit remains unsettled today, and we may presume that the litigants are still negotiating for a solution or about to go back to court.

This case has ramifications for libraries. The lion’s share of the digitized books from the project are being mounted by the University of Michigan as part of the holdings of the HathiTrust consortium of libraries.<sup>33</sup> In September 2011 the Authors Guild (one of the original litigants in the Google case) filed a suit against the HathiTrust seeking “an

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injunction barring the libraries from future digitization of copyrighted works; from providing works to Google for its scanning project; and from proceeding with its plan to allow access to orphan works [and it] also asks the court to impound all unauthorized scans and to hold them in escrow pending an appropriate act of Congress.”<sup>34</sup> Given the Congressional propensity to inaction and gridlock, we may expect clarification of the status of orphan works when “hell freezes over.” In the instance of “hell freezing over,” we might find the legislation unfriendly to the public domain.

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In December 2011, lawyers for the University of Michigan asked that “the Authors Guild suit... be dismissed because the libraries are protected by state sovereign immunity, and also that the HathiTrust is in fact ‘a service’ of the University of Michigan, and not a distinct legal entity that can be sued.” On the merits, meanwhile, lawyers claim the libraries’ activity is permissible under fair use, section 107 of the *Copyright Act*, as well as sections 108, the library exemption, and sections 109, 110, and 121.”<sup>35</sup> The entire corpus of ten million books remains searchable and full-text reading is available for out-of-copyright works, but only snippets are available for online viewing of works in-copyright. HathiTrust plans to release to online viewing titles that it judges are orphan works.<sup>36</sup> The corpus has enormously important and positive implications for scholarship, particularly for the humanities and social sciences. Nonetheless, the HathiTrust libraries are paying a price as they are drawn into the legal vortex created by the mass digitization.

I have devoted a great deal of time to the topic of law and litigation because of its pervasive impact. It seems unlikely that we will have Congressional action that clarifies the copyright issues that pertain to digitization projects, and it will take more years for legal clarity to emerge from court cases, if it ever does. The cost will be great and the impact negative on advancing the cause of the digital capture of library collections. The attempts to prevent federal agencies from requiring public access policies as a condition of research grants seem to continue unabated, even after over five years of the practice by NIH has proven its value. None of this is surprising.

### **Publishing—It’s Not Print Anymore**

Let us turn to a consideration of the system of scholarly publishing, if one can call it a system. It still evinces legacy characteristics deeply rooted in the world of printed books and journals from which it is evolving. It is international in reach and may be divided into distinct sectors quite different from one another. Not for profit publishers emerged at the end of the 19th century and these were first highlighted by the broad establishment of associations with their dual purpose—serving as a forum for the disciplines



and as an outlet for journal and, to a lesser degree, monograph publishing. It was and is supported by member dues and publication sales principally to academic libraries. In this country, the first university press was founded in Cambridge, Massachusetts, in 1636, but most are of 20th century vintage, and the greatest number of these are small operations that depend on partial subvention from institutional budgets.

Commercial scholarly publishing, by contrast—particularly for journals in the science-technology-medicine sector—includes the kind of enterprise that Robert Maxwell invented—please excuse sarcasm about a dead entrepreneur (some might say predator) and of an extinct company. The Pergamon phenomenon really became the model for commercial STM journal publishing after WWII. A media industry resource has described Pergamon as “the prototype [commercial] scientific journal publisher that pays authors nothing, pays editors a pittance and increases prices at a significantly greater rate than the cost of living.”<sup>37</sup> This type of publisher gets a lion’s share of the money research libraries spend annually on information, and this has a negative impact on the other publishing sectors, as licenses for “big deals” lock in bundles of materials at guaranteed rates. These publishers are answerable not to us but to their shareholders. Given that, they behave in a perfectly rational manner but, in large measure, have become a threat to the survival of the not-for-profit association publishing and university press publishing sectors. I believe, to some degree, we (that is, universities, libraries, and faculty) are to blame.

### Research Universities

Much—perhaps most—new knowledge is the product of scholarship in research universities. The resources of these institutions are committed to research through their investments in people and capital, and are partially subvented by extramural funding of research. The products of that research are, to a great extent, funded by the U.S. government and foundations, given to publishers by the assignment of copyrights, and purchased back by their libraries. Intellectual property (IP) functions are a central consideration, but institutional policies have usually focused on patents and trademarks. The general practice is for faculty to retain copyrights to their published works, but these are routinely signed away as part of the bargain with publishers and pass out of control of the authors. We have only begun to grapple with data sets and other products of the full life cycle of the research process that may have long-term utility. What control there is of copyrights has been lodged with individual decisions by faculty whose legitimate primary concerns are career advancement and making their research known. This leads to tens of thousands of individual IP decisions made on the path of least resistance. Peer review and the appointment-promotion-tenure process together sustain the current model, but they could as well sustain a different model that served research universities better. The obstacles to changing these practices are enormous.

Commercial publishers certainly understand this system and the advantages it brings them. For instance, in its investors seminar presentation late last year, Elsevier Science indicated the objectives of research scholars were to win funding, conduct research efficiently, publish quickly in high-impact journals, demonstrate impact (by which they mean citations), and get peer recognition, promotion, and tenure. This leaves out the equally important goals of collaboration, sharing research, and advancing the field.



Elsevier receives 71 percent of its revenue from what it calls the “highly penetrated, stable customer base” of “research universities.” Of the balance, 13 percent comes from government and 16 percent comes from corporate sources.<sup>38</sup> Other commercial publishers of scientific and technical literature (STM) are probably not much different. In many ways, faculty are the lynchpin since academic and research libraries support their research and classroom teaching through access.

University presses are found in many, but not all, research universities. In recent years, many institutions have considered closing their presses or insisted that they be completely self-supporting. Need it be said that scholarly monographs are subject to increasingly small press runs and, at best, are a break-even proposition? These presses suffer from the tragedy of the commons because many research institutions do not have presses and exploit others that do by avoiding responsibility for book publishing. When these presses publish journals, generally they are not in STM disciplines and are few in number. They do not return large profits since the largest revenue streams go elsewhere. John Tagler asserts that the 2009 *AAP Industry Statistics Report* for Professional and Scholarly Publishers (PSP) “reveals that the lion’s share of revenue continues to be derived from institutional subscriptions where, in the STM and scholarly publishing sphere, academic and research libraries spend the majority of their materials budgets on journal content.”<sup>39</sup>

Libraries must be considered integral to this system. Beginning with FY 2008 and for the next three years, ARL surveyed the impact of the economic downturn on its members by gathering data on budgets at the beginning of the fiscal year; our normal statistical reporting is for end-of-year expenditures. Clearly these libraries’ purchasing power has been diminished during this time, for some dramatically. Nonetheless, the total fiscal resources of ARL members devoted to the acquisition of information is not trivial—amounting to over \$1.4 billion in FY 2009–10. This is a substantial resource supporting the higher education scholarly

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communication system. On the other hand, the diminished financial capacity of the research library to invest in the big scholarly journal packages has occurred just as the major electronic publishing initiatives for scholarly monographs are finally coming to the market. This unprecedented period of contraction has focused the minds of research library leaders to make renewed efforts to find solutions to long-term deleterious trends in the cost of information they acquire. For instance, they have resisted the historical practice of cannibalizing other parts of the budget (such as monographs) to pay for large cost rises in STM journals. Similarly, we are witnessing a change in the willingness to license the “Big Deal” packages; hard bargaining where price rises are concerned; and a refusal to sign non-disclosure agreements in contracts. Such actions are vital, but in a sense they are retrospective rather than prospective.





### Conclusion—Choosing the “Path Forward”

So, what is the path forward? In my view, the scholarly communication system has the dual purpose to advance knowledge and support learning. Everything else is secondary and useful only so long as it achieves these purposes. An observation by Harvard’s provost nicely makes this point. Today, “even Harvard University, whose library is the largest academic library in the world, is not immune to the access crisis motivating much of the campaign for public-access policies. In fact, the Harvard library system has had to make a painful series of budget-driven journal cancellations, and we are deciding on a set of further cancellations at this very moment.”<sup>40</sup> I have described in some detail the forces that are contending for control of scholarly communication. To say that it is a complex environment is understatement. But I should offer a path forward. The steps I believe are warranted emphasize the values of the academy and academic libraries.

It seems unlikely that we could bring together all the stakeholders from these three sectors and invent a new system of scholarly communication from scratch to replace the one we have, one that supports the core values of research universities. To accelerate the transformation of scholarly publishing to a more functional system, the academy should emphasize collective and collaborative actions that will advance the agenda of positive change. Any new system will evolve from the present one. I have a few strategies to suggest but there is no single action that can transform the landscape. Any thinking about the future must put in high relief the changes that our research institutions face in the form of research innovation. We need to understand the increasing relevance of research data as part of the full life cycle of research and to understand cyberinfrastructure as the primary medium for the work of scholars in all disciplines, not just in STM.

The full potential for using network technology and computational power to accelerate scholarship depends on unfettered access to publications and data. OA is emerging; but access, in turn, depends upon the clearly stated rights to use and re-use both. The

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full realization of this sort of vision will be dependent on the extent to which the academy embraces open access to create new knowledge, to build on earlier findings, and to translate research for educational and commercial use.

Advocacy for OA is expected

from ARL, but the clarion call came from the scientific community beginning with Harold Varmus at NIH and the first Berlin Conference in 2003. Through SPARC, ARL has worked hard to support OA with many other academic library partners. Making the case for public access to tax funded research is a principled stand. There are equally strong cases to be made, however, for the both the economic benefits and the acceleration of research scholarship that results.

The case for proposed legislation like the *Research Works Act* has been based on protection and/or creation of jobs. That is something that motivates politicians, even when the case is flimsy or merely bald assertion by special interests. So what is to be said





in favor of the economic impact of OA? There is already a strong case to be made that public access to high-end research results enables a broad array of businesses and industries to nourish their own R&D and develop new products, thereby, creating jobs. There is a substantial body of research demonstrating that making publicly funded research available to all those who can use it just makes sense from an economic development standpoint. Early studies during the 1990s provided tangible evidence for the economic benefits to product innovation and revenue gains due to public access. Recent confirmation for these studies is to be found in the work of John Houghton, commissioned by SPARC and focused on the *Federal Research Public Access Act (FRPAA)*:

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Preliminary modeling suggests that over a transitional period of thirty years from implementation, the potential incremental benefits of the proposed *FRPAA* archiving mandate might be worth around eight times the costs. Perhaps two-thirds of these benefits would accrue within the US, with the remainder spilling over to other countries. Hence, the US national benefits arising from the proposed *FRPAA* archiving mandate might be of the order of five times the costs.

Exploring sensitivities in the model we find that the benefits exceed the costs over a wide range of values. Indeed, it is difficult to imagine any plausible values for the input data and model parameters that would lead to a fundamentally different answer.<sup>41</sup>

This is but one of many such studies that make the compelling case for OA policies for all government-funded research—some by Houghton but supported by others.<sup>42</sup> Those who most strongly question these studies are also the sponsors of efforts to eliminate OA policies because it is their interest to do so. But we should not settle for the economic argument alone when there is an equally powerful case to be made for the advancement of human knowledge that is perhaps the most important value of the academy. Let me give you the OA talking points developed by ARL:

- Open Access to research articles is a **critical driver of scientific innovation and productivity**.
  - Increases citations and follow-on research
  - Promotes diversity in follow-on research
  - Increases the pursuit of new research pathways
  - Encourages faster application of research
- Faster access lets scientists **incorporate new findings** into their research rapidly.
- Open Access to these articles allows scientists to **use new tools** (like machine reading, computational tools) to get to, and read, more information faster.
- Open Access enables machines as a new category of reader.
- Open Access encourages contributions by “**unforeseen participants**” expanding the potential for new, innovative, interdisciplinary discoveries.



Again, we find a body of research literature that proves the productivity gains for scientific research.<sup>43</sup> But the most compelling case is that made by the scientists who directly participate in the benefits of openness and can speak to the real-life impact it has. The Berlin9 Conference, “The Impact of Open Access in Research and Scholarship,” November 2011, in Washington, DC, (<http://www.berlin9.org>) brought together an international audience and research scholars who express in no uncertain terms how indispensable OA is to the accomplishment of their work and the future of their disciplines, from the humanities to the hard sciences. Their emphasis is not on advocacy—for them OA is a fact of everyday professional life. It is imbedded in the way they think about their work, from initial research and experimentation to collaboration and final publication of the research results. Do not tell them that their works published by large commercial firms need the protection of Federal legislation from open posting. For them the principle of “openness” is essential and inviolate. One gets the feeling when listening to these scholars that the attempts, however real, to reverse the trend will inevitably fail. Even in the commercial STM camp, we begin to see the first glimmers of recognition that the future is with open access. For instance, at the 2011 STM meeting in Frankfurt, Steven Hall (*managing director, Institute of Physics Publishing in London*) posed a critical issue to his audience: “There is unease and even strong resistance in the publishing community to the imposition of mandates by funding agencies which force researchers to use a particular model of dissemination and restrict their choice of publication. So how should publishers respond to the growing demands for open access: by engaging or opposing?” He described the reaction of publishers to OA as going through something like the five stages of grief—denial, anger, bargaining, depression, and finally acceptance. He observed that OA will not be the only business model, but it will play a very large role. He laid out a set of “principles of constructive engagement,” arguing strongly for gold over green OA. To his great credit, he urged that when OA gold publication fees were taken, publishers must avoid the cynical intent of not taking them into account in pricing and that the size of the profits may well decline.<sup>44</sup>

Research institutions already have vigorously initiated one important part of the path forward that emphasizes a key value of sharing—that is open access (OA) strategies. OA is really being led by our universities. What is the evidence?

- Worldwide, over 300 research and higher education institutions have a variety of mandates, both institutional and sub-institutional. In the U.S. and Canada 49 colleges and universities have one or more OA mandates, and 31 of these are members of ARL.<sup>45</sup>
- These mandates are supported by the recent founding of the Coalition of Open Access Policy Institutions. It will “collaborate and share implementation strategies, and advocate on a national level.”<sup>46</sup> For those who have not, it is time to engage faculties in a discussion about a deposit mandate on your campuses. At the same time, this is not a large proportion of institutions and it is important that such OA policies become characteristic.
- The academy must strongly support passage of the *Federal Research Public Access Act*—almost half of AAU institutions and numerous others already have endorsed the *FRPAA*, which will extend the NIH posting policy to other federal agencies



and has the potential to enable the maximum downstream use of the investment in research. At the beginning of February, the FRPAA legislation was simultaneously re-introduced in both houses of Congress—in today’s political climate an extraordinary example of bicameral bipartisanship. Continued support for the passage of *FRPAA* is essential.

- There are today over 1,700 OA repositories on campuses worldwide that provide the infrastructure investment that allows widespread posting of research results. Supporting them is vital.

Our universities also need to look to internal reform, including a vigorous discussion about how to reshape the appointment-promotion-tenure (APT) process to support changes in the landscape. This includes the ways in which we set the value of research. For instance:

- Diversifying the measures of quality of research so that the *Journal Citation Reports* of “impact factor” is not the only measure and include, for instance, citation and use counts and Hirsch’s *h*-index;
- Developing a more holistic view that recognizes all elements (including data) as the full life cycle of research, not just the end products;
- Pressing vigorously to assure that publication in OA and e-journals is given due credit; and
- Considering the value to our institutions of IP in the form of copyright by emphasizing the retention of rights through mechanisms like Creative Commons licensing and deposit in institutional repositories.

The academy has paid a great deal of attention to trademarks and patent IP while ignoring the copyrights, the central mechanism that drives scholarly publishing. OA policies are a good but insufficient step toward changing things. The next step is to encourage faculty to use Creative Commons copyright licenses for all their publications instead of signing them over to publishers or personally retaining copyrights. The Attribution Share Alike license (CC By SA to use the shorthand) should be the default. I will insist on it for the publication of this paper, where previously I retained my copyrights and gave a license to the publisher. The attribution license does not interfere with publisher needs and allows our faculty to continue submitting to commercial non-OA journals. In addition, a CC license presents no obstacle to an author who wishes to secure a patent. Patent disclosure requirements can be easily accommodated.

Equally important, there is a shift in the mood of faculty around all of these issues that reflects a higher level of awareness that accepted practice previously unquestioned must change. The single best recent example is the petition inspired by a single UK mathematician, Thomas Gowers, calling for colleagues to cease submission, editing, and reviewing for Elsevier. The level of response is surprising and, as Tom Worstall says, “it looks like one of those pebbles that starts the avalanche rather than the one that just tumbles down the hillside.”<sup>47</sup> The importance of faculty activism in this matter is underscored by the recent Bernstein *Research Report* that stated:

In this respect, we think that the academic community is likely to become “smarter” than it has been in the past. Some academics have started to understand that Elsevier



may be more vulnerable in the stock market than in its relations with academic libraries. This may well lead academics (and academic librarians) to push for more, targeting aggressively academics who sit on editorial boards. Elsevier can try to hold on to them (after all, there are all sorts of perks available for the members of editorial boards), but this can—in turn—become an even greater issue if the academic community decides that monetary compensation and T&E create an untenable conflict of interest.<sup>48</sup>

The academy can also play a more vigorous role in shaping scholarly communication publishing. There are today over 6,000 OA journals, many not-for-profits (NFP), but some from commercial presses as well. As time has passed, many have achieved solid to high impact factors, as imperfect a measure as that may be. PLoS Biology and PLoS Medicine are among the highest in their respective sub-disciplines. Three of the largest biomedical research funders (Hughes, Wellcome Trust, and Max Planck) late last year announced the creation of a new OA journal that is likely to have a high impact. High value must be placed on OA journals in the APT process and fiscal resources must be committed to paying for OA gold.

The academy must grapple with the long-running crisis in monograph publishing that threatens the humanities and social sciences. There is an uneven investment in presses, and fiscal resources should be committed to the publication of the “long argu-

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ment” format. The investment is an especially important obligation when a university has no press of its own. Universities and libraries must support their presses in the risk-taking necessary to move to new business models and e-book publishing projects such as MUSE/UPCC and JSTOR.<sup>49</sup> We are seeing the beginning of serious proposals to help university presses find a way toward an open

access model. Perhaps the most innovative is the Global Library Consortium suggested by Frances Pinter, former publisher of Bloomsbury Academic in the UK.<sup>50</sup>

There are numerous journals published on a shoestring in universities that need attention. ARL’s recent report, “Publishing Support for Small Print-Based Publishers: Options for ARL Libraries,”<sup>51</sup> is the summary of a project to investigate how research libraries can provide support to print-only publishers, particularly small campus journals, in order to ensure permanent digital access to their content. Similarly, ARL has had a partnership with BioOne since its founding a dozen years ago—a global, not-for-profit collaboration bringing together scientific societies, publishers, and libraries to provide access to critical, peer-reviewed research in the biological, ecological, and environmental sciences. It publishes electronically 167 titles from 125 publishers. Such collective action should be encouraged as a counter to larger and larger commercial consolidation. We must also look to innovative ways to shift the commercial environment. ARL has worked hard in cooperation with CERN and SPARC to jump start SCOAP3, which is a new model for scholarly communication for key disciplinary journals proposed by a scientist in high energy physics.<sup>52</sup>



All of this will challenge the traditional structure and purposes of academic libraries and will transform them in unpredictable ways. This is recognized by librarians as we seek to manage the current mission and figure out what scenarios are likely to play out in the future. The most salient trend is what Jim Neal at Columbia calls “radical collaboration”—the creation of permanent, robust, inter-institutional activities that increase capacity, yet do not cost more. These new models for building shared collaborative infrastructure are only just beginning to take shape, but if nothing they must have scale. National print repository efforts such as the HathiTrust and the 2CUL project come to mind. Similarly, we are on the verge of a major shift in collecting that will be a vital part of any scholarly communication system that takes shape in the future. So long as scholarly communication was conducted through print media, it made sense to acquire as much as possible and preserve it in many campus libraries. The migration to electronic will have profound effects on everything from access decisions (no longer called acquisitions) to preservation (and there are some great big dangers in this last). Research libraries are also seeing the need to take on new roles—data preservation, combining with their presses, archiving the Web, and so on. Given this, ARL has established the 21st Century Research Library Collections Task Force. It is charged to articulate an action plan for the future of research library collections and some of the emerging functions related to content managed by research libraries in a digital age. These strategies may help articulate that common path forward; but any truly transformational change that moves us toward a more rational system of scholarly communication must vigorously engage, as allies in this effort, faculty and academic leadership, as well as higher education associations like AAU and APLU.

*Charles B. Lowry, Ph.D., is Executive Director, Association of Research Libraries, Washington, DC, and may be contacted at [clowry@arl.org](mailto:clowry@arl.org).*

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