COPYRIGHT PROTECTION FOR FEDERALLY FUNDED RESEARCH: NECESSARY INCENTIVE OR DOUBLE SUBSIDY?

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ABSTRACT

Should works resulting from research that has been substantially subsidized by the United States federal government be protected by copyright, or immediately enter the public domain? The Public Access to Science Act (PASA) would place these works in

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the public domain in the same manner as works prepared by government employees. This paper evaluates the merits of the legislation by placing the question of the appropriate copyright treatment of federally subsidized works within a historical perspective, taking into account the underlying purposes of copyright policy as well as the changes that have taken place in the field of scholarly publishing since Congress last considered the issue in 1976. The regulatory environment and practices of the major federal funding agencies are reviewed, showing that agencies have failed to utilize their broad discretion over the treatment of funded works, resulting in over-protection of works as the default rule.

This paper considers how the balancing of interests that has historically informed copyright policy should be applied to works that have been federally supported; it will review and assess the initial reactions to PASA from the point of view of various stakeholders, including commercial publishers, non-commercial publishers, universities, authors and researchers, and library associations; and it will consider whether PASA's purposes might be accomplished through other mechanisms.

This paper reaches the conclusion that works resulting from extramural research that has been substantially subsidized by the federal government should enter the public domain in the same manner as works resulting from intramural government research undertaken by federal employees, and that PASA provides a straightforward mechanism for reaching this result.

INTRODUCTION

Should works resulting from research that has been substantially subsidized by the United States federal government be protected by copyright, or immediately enter the public domain? This question has been raised by legislation introduced in the United States Congress by Rep. Martin Olav Sabo (D-Minn) on June 26, 2003.[1] In an attempt to evaluate the merits of the legislation, this paper seeks to place the question of the appropriate copyright treatment of federally subsidized works within a historical perspective, taking into account the underlying purposes of copyright policy in the United States, as well as the far-reaching changes that have taken place since Congress last considered the issue in 1976.

As federal outlays for scientific, technical, and medical (STM)

[1] Public Access to Science Act, H.R. 2613, 108th Cong. (2003) (to amend Title 17, United States Code and to exclude from copyright protection works resulting from scientific research substantially funded by the federal government).

research increase, so does the volume of articles reporting on the results of this research. As the research enterprise has traditionally been based on the notion of cumulative efforts, where one researcher builds on the work of others, ready access to this growing body of knowledge is increasingly important. Recent advances in information technology have enabled new models of scholarly communication to emerge whereby these research results may be effectively disseminated to broader audiences with greater speed and less cost than was even remotely possible in the past.

Yet the cost of STM journals is continuing to skyrocket, and increased concentration in the publishing industry is leaving fewer publishers with control over more titles. The "serials crisis" has become a fact of life for librarians who must grapple with the problem of subscription cost increases far outpacing their serials budgets and the rate of inflation. Cancellations of titles become commonplace, and more libraries try to leverage their eroding resources through interlibrary loans, purchasing individual articles from document suppliers, or simply doing without. As one commentator observed, "it has become increasingly clear that this crisis extends past the library, into our classrooms and laboratories. Not only are whole lines of scholarship in danger of disappearing, but professionals in industry, government, and education are finding that the information that does remain available is too expensive to access."[2]

It is within this context of rising serials costs, industry concentration, and advances in information technology, that the question of copyright in federally subsidized works needs to be placed. Section I-A of this paper will begin by discussing section 105 of the Copyright Act of 1976, tracing its roots and considering the legislative history behind its enactment. A review of this history as well as the subsequent case law indicates that the copyright treatment of federally subsidized works needs to be reexamined in light of subsequent events. In 1976, Congress made the decision to leave the question of whether copyright should subsist in works resulting from federally funded research to the individual agencies to determine on a case-by-case basis. While there has been a general reluctance on the part of funding agencies to exercise this discretion in favor of the public domain, much has changed since 1976. The increased magnitude of federal support for scientific research, the

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[2] Mike Sosteric, *Freedom from the Press: Alternative Academic Publication Strategies and the True Potentials of Information Technology*, TECH. SOURCE, Apr. 1999, *available at* http://ts.mivu.org/default.asp?show=article+id=27 (last visited Sept. 22, 2004).

severity of the serials crisis facing academic libraries, the increased level of concentration in the publishing industry, and the emergence of alternative models for the distribution of scholarly research have all converged to create a contemporary policy environment that would have been unrecognizable a quarter of a century ago. These factors will be discussed in Section I-B.

In order to deepen the context for the evaluation of the Sabo Bill, Section I-C will provide an overview of the National Institutes of Health (NIH) and the National Science Foundation (NSF) and review their copyright-related polices. Section I-D will then review the purposes of copyright law, stressing the importance placed on balancing incentives for authors with the need to preserve public access to works. The substantive provisions of the Sabo Bill will be discussed in Section II, and Section III will review and assess the initial reactions to the bill from various stakeholders and commentators. Section IV will consider and evaluate several alternative policy options for addressing the stated objectives of the Sabo Bill, short of removing copyright in works resulting from federally funded research and placing them directly in the public domain. This paper ends with the conclusion that works resulting from federally subsidized research should immediately enter the public domain, and that the Sabo Bill provides a good mechanism for reaching this result.

I. THE CURRENT STATE OF UNITED STATES COPYRIGHT LAW UNDER SECTION 105

Section 105 of the United States Copyright Act provides, "copyright protection is not available for any work of the United States Government, but the United States Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise."[3] A "work of the United States Government" is defined as "a work prepared by an officer or employee of the United States Government as part of that person's official duties."[4] If a work comes within these provisions, the copyright interest does not arise and the work is immediately within the scope of the public domain.

A. *Legislative Background and Judicial Interpretations*

The current language of section 105 was enacted as part of the general revision to the Copyright Act in 1976 and was carried for-

[3] 17 U.S.C. § 105 (2000).
[4] *Id.* § 101.

ward from its predecessor, the Copyright Act of 1909.[5] The statutory prohibition against copyright in works of the federal government first appeared in the Printing Act of 1895,[6] and was simply presumed to exist before that time.[7] The recognition that works of the United States government should not be subject to copyright limitations is in contrast to the English notion of Crown copyright. As the term implies, Crown copyright means that the government (the Crown) retains a copyright interest in the works it produces. Crown copyright remains intact in the United Kingdom[8] and Canada[9] to this day.

The Sabo Bill raises directly as a policy issue the status of works that are not directly prepared by the government, its officers or employees, but are made under contract with substantial funding from the government. While the legislative history of the 1976 revision to the Copyright Act recognized this issue, it left the matter unresolved:

> A more difficult and far-reaching problem is whether the definition should be broadened to prohibit copyright in works prepared under U.S. Government contract or grant. As the bill is written, the Government agency concerned could determine in each case whether to allow an independent contractor or grantee, to secure copyright in works prepared in whole or in

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[5] The Copyright Act of 1909 (ch. 320, § 8, 35 Stat. 1075) provided, in pertinent part, that "no copyright shall subsist . . . in any publication of the United States Government or any reprint, in whole or in part thereof." *See* H.R. REP. NO. 94-1476, at 59 (1976) (finding

> [t]he basic premise of section 105 of the bill is the same as that of section 8 of the present law (section 8 of former title 17) - that works produced for the U.S. Government by its officers and employees should not be subject to copyright. The provision applies the principle equally to unpublished and published works.).

[6] Ch. 23, § 52, 28 Stat. 601 (1895). *See* Andrea Simon, Note, *A Constitutional Analysis of Copyrighting Government-Commissioned Work*, 84 COLUM. L. REV. 425, 430 (1985) (noting that the impetus for enacting the Printing Law was the "Richardson Affair." Congressman Richardson had been assigned the task of assembling presidential documents for publication, which he printed with a copyright notice in his name. Although Richardson asserted that he did not claim copyright as against the government, a subsequent Senate investigation nevertheless declared his copyright invalid).

[7] *See* Robert M. Gellman, *Twin Evils: Government Copyright and Copyright-like Controls Over Government Information*, 45 SYRACUSE L. REV. 999, 1024 (1995) (citing MORRIS B. SCHNAPPER, CONSTRAINT BY COPYRIGHT: A REPORT ON "OFFICIAL" AND "PRIVATE" PRACTICES 98 (1960): "Prior to 1895, it was generally recognized that copyrighting of federal government material was improper."). On the history of the exclusion for works of the government, *see also* Jerry E. Smith, *Government Documents: Their Copyright and Ownership*, 5 TEX. TECH L. REV. 71 (1973).

[8] Copyright, Designs and Patents Act 1988, ch. 48, § 163.

[9] The Canadian Copyright Act, R.S.C., ch. C-42, § 12 (1985) (Can.) provides that the government owns the copyright of any work that has been prepared or published by or under the direction or control of any government department. This provision is subject to any agreement or regulatory waivers to the contrary.

part with the use of Government funds.[10]

Congress recognized that agencies of the federal government should possess the power to determine whether copyright interests should arise in situations where the author has been subsidized by government funds. While not often invoked, this agency discretion to preclude copyright in favor of the public domain is enforceable. For example, in *S & H Computer Systems Inc. v. SAS Institute Inc.*,[11] a federal district court held that where a United States Department of Agriculture contract stated that the public would be granted all benefits of any copyrightable results of funded research, the resulting statistical software was in the public domain.[12]

The 1976 House Report also discussed the policy arguments on both sides of the issue:

> The argument that has been made against allowing copyright in this situation is that the public should not be required to pay a "double subsidy," and that it is inconsistent to prohibit copyright in works by Government employees while permitting private copyrights in a growing body of works created by persons who are paid with Government funds. Those arguing in favor of potential copyright protection have stressed the importance of copyright as an incentive to creation and dissemination in this situation, and the *basically different policy considerations*, applicable to works written by Government employees and those applicable to works prepared by private organizations with the use of Federal funds.[13]

The Report does not define these "basically different policy considerations" that distinguish works prepared directly by government employees from works prepared under federal subsidies. This crucial distinction is often referred to as one between "intramural"

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[10] H.R. REP. NO. 94-1476, at 59 (1976).

[11] 568 F. Supp. 416 (D.C. Tenn. 1983).

[12] The relevant contractual provision stated:

> With respect to the publication of any results of the research conducted under this Agreement . . . no copyrights shall subsist in any such publication . . . the public shall be granted all benefits of any patentable results of all research and investigations conducted and all information, data and findings developed under this Agreement.

568 F. Supp. at 418-19. But copyright in a subsequent upgrade was not necessarily precluded. "A genuine factual controversy exists regarding the alleged similarity of SAS 76.2 and SAS 79.5. All or at least some portions of SAS 79.5 may be validly copyrightable. Thus, the Court cannot dismiss the SAS claim for copyright infringement." *Id.* at 419. Subsequently, the court found the upgrade to constitute "a new and original work of authorship, above and beyond the pre-existing work contained in the earlier release of SAS. Accordingly, the copyright in SAS 79.5 is valid and fully enforceable." SAS Inst., Inc. v. S & H Computer Sys., Inc., 605 F. Supp. 816, 827 (D.C. Tenn. 1985).

[13] H.R. REP. NO. 94-1476, at 59 (1976) (emphasis added).

(information created *by* the federal government) and "extramural" (information created *for* the federal government) funding.[14]

The 1976 Act did not resolve the disparate treatment between in-house and commissioned works, but the House Report indicated an intent to leave the question open for a case-by-case determination on the part of individual funding agencies:

> The bill deliberately avoids making any sort of outright, unqualified prohibition against copyright in works prepared under Government contract or grant. There may well be cases where it would be in the public interest to deny copyright in the writings generated by Government research contracts and the like; it can be assumed that, where a Government agency commissions a work *for its own use merely as an alternative to having one of its own employees prepare the work*, the right to secure a private copyright would be withheld. However, there are almost certainly many other cases where the denial of copyright protection would be unfair or would hamper the production and publication of important works. Where, under the particular circumstances, Congress or the agency involved finds that the need to have a work freely available outweighs the need of the private author to secure copyright, the problem can be dealt with by specific legislation, agency regulations, or contractual restrictions.[15]

The emphasized passage is significant because it shows a clear Congressional intent to set limits on the copyrightability of commissioned works. Was this passage meant to delimit the boundary between works in which copyright should subsist from works that should immediately enter the public domain? Or was it meant only as an illustrative example of an instance where a work should enter the public domain? While the passage is ambiguous and either interpretation is reasonable,[16] the case law supports the former inter-

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[14] According to the National Institutes of Health, "Intramural NIH research is done by scientists employed by the Federal government. Most of them work on the NIH campus in Bethesda, Maryland. Extramural NIH research is done across the United States and in some foreign countries by investigators who have been awarded grants through the NIH grant program." National Institutes of Health, *Researching the History of the NIH: Frequently Asked Questions*, *at* http://history.nih.gov/history/fact/index.html (last visited Sept. 22, 2004).

[15] H.R. REP. NO. 94-1476, at 59 (1976) (emphasis added).

[16] *See* Simon, *supra* note 6, at 427 n.13 (citation omitted) (arguing that:

> At least three constructions of "merely . . . an alternative" have been suggested. In the 1982 version of his treatise, Professor Nimmer suggested that a commissioned work might be deemed a mere alternative if it were the kind of work ordinarily prepared by employees of any government agency. He presumed, however, that this broad objective construction was not intended. He posited instead that a work would be a mere alternative if the subjective reason for its being contracted out was to evade the government copyright prohibition. The court of appeals in *Schnapper v. Foley*, 667 F.2d 102, 109 (D.C. Cir. 1981), *cert.*

pretation. In *Schnapper v. Foley*,[17] an action to invalidate the copyright in a series of films produced by a contractor for the Administrative Office of the Supreme Court (entitled *Equal Justice Under the Law*) was dismissed. Relying on the above-referenced passage from the 1976 legislative history, the Court of Appeals affirmed the dismissal, rejecting the plaintiff's claim that section 105 should invalidate the copyright because the contract was not commissioned as an alternative to having government employees prepare the film.[18]

The reasoning in *Schnapper* was extended in *United States v. Washington Mint, L.L.C.*,[19] a case involving the infringement of the design of a United States coin by a private mint.[20] The defendant attempted to distinguish *Schnapper* because "the United States Mint had employees on staff who could have designed the Sacagawea coin, whereas the Judicial Conference does not likely employ a team of filmmakers."[21] The court found the distinction unpersuasive:

> The available evidence strongly undermines such a conclusion. Documents published on the United States Mint's website in June 1998 state that the government has received complaints from coin collectors for many years about the "static" nature of the coin designs it has produced and the lack of public participation in the design process. In response to these concerns, the

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denied, 455 U.S. 948 (1982), concluded that copyright could be withheld if "the commission is merely an alternative to producing the work in-house." Under this objective standard, if the particular government agency commissioning the work lacked the ability to do the work "in-house," the commission was not a mere alternative. But, if the agency had the capability, then copyright would be denied, regardless of legitimate subjective reasons for hiring a contractor, such as better quality or faster service).

17 471 F. Supp. 426 (D.D.C. 1979), *aff'd*, 667 F.2d 102 (D.C. Cir. 1981), *cert. denied*, 455 U.S. 948 (1982).

18 *See* 667 F.2d at 108 ("It is readily observable, therefore, that the language of the new Copyright Act does not prohibit copyright protection for federally commissioned works. Whatever doubt there may be left after reading the statute is wholly dispelled by the legislative history, which states plainly that these commissioned works may be eligible for copyright protection.").

19 115 F. Supp. 2d 1089 (D.C. Minn. 2000).

20 When the government decided to replace the Susan B. Anthony dollar with a new design in 1997, it commissioned outside artists rather than using in-house artists employed by the United States Mint. For the obverse of the coin, the government selected a design submitted by an artist who was not a government employee, and the government was assigned all rights in the design. After the design was released to the public, defendant Washington Mint copied the design, produced replicas, and the action followed. While defendant relied on the general § 105 prohibition against copyright in works prepared by an officer or employee of the United States Government, the government relied on the provision in § 105 allowing it to hold copyrights in works transferred to it by assignment when such works are not prepared by government employees. Defendant argued that the purported copyrights were invalid because the government commissioned them.

21 115 F. Supp. 2d at 1097.

> United States Mint engaged in a unique selection process focused on substantial public participation in the creation and selection of the new coin design. This evidence supports a reasonable inference that the government sought designs from private artists in order to cultivate public approval of the new coin.

Moreover, the manner in which the designs were selected negates any contention that the government sought to circumvent the statutory prohibition on copyrighting government works. Plaintiff concedes that the selection process was anonymous, and that works from both private artists and government employees were considered. This process resulted in the selection of both Goodacre's obverse design, and a reverse design submitted by an artisan from the United States Mint. The government's decision to consider uncopyrightable works created by United States Mint employees, and ultimately to choose one of these designs through an anonymous selection process, substantially undermines defendants' contention that the government solicited outside participation solely in order to gain copyright protection. For these reasons, the Court rejects defendants' contention that the copyrights at issue are invalid as violating the public policy underlying section 105.[22]

Although it was readily apparent that the government's commissioning of private artists was indeed an alternative to having one of its own employees prepare the work, the court refused to find non-copyrightability, the result that appears to be clearly dictated by the legislative history. While *Schnapper* and *Washington Mint* both demonstrate a marked judicial reluctance to disturb decisions of the federal government with respect to the subsistence of copyright in commissioned works, *Washington Mint* is particularly troublesome; it seems to vitiate the express intention of Congress to place limited restraints on copyright arising in these works.[23]

For over a quarter of a century, the status-quo favoring broad

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[22] *Id.*

[23] *See* DAVID NIMMER, 1-5 NIMMER ON COPYRIGHT § 5.13 (concurring with the assessment that *Washington Mint* is inconsistent with Congressional intent:

> This case would seem to set at naught the limitation that the Government cannot own copyright in works it creates—so long as agencies of the Government judiciously rely on outsiders who agree by contract to transfer copyrights to their creations. Moreover, although *Schnapper* defended its ruling that the film about the Supreme Court fell outside "the official duties of any Government employee," those considerations were conspicuously absent in *United States v. Washington Mint.* After all, it is the primary mandate of the United States Mint to design and distribute coinage. In sum, the upshot of this case would seem to conflict with Congress' intent in enacting section 105.).

copyrightability in federally supported works has remained undisturbed, and scant attention has been given to the underlying issue by government entities, policy makers, legislators, and members of the public. Given the growing importance of STM research and the publications that grow out of it, it seems an anomaly that the determination of copyright policy continues to be made on an ad-hoc basis at the agency level.[24] The Sabo Bill places the need for further legislative and regulatory guidance on the policy agenda, bringing this pressing issue to the public's attention.

B. *Changes in the Contemporary Policy Environment*

Since 1976 there have been massive changes in the nature and character of the scope of government-sponsored research, as well as in the way research results are disseminated and accessed. The most obvious changes are the scope and levels of funding for scientific research. In 1976, federal research and development expenditures were $20.3 billion, and grew to an estimated $69.6 billion by 2000.[25] Federal research and development obligations to universities and colleges grew from $4.4 billion in 1981 to $15.6 billion in 1999.[26] A search on the PubMed website for articles supported by the United States government returned 1,419,899 entries.[27]

There are also significant changes taking place in the publishing industry that impact the way in which research results are disseminated and accessed. As one observer has noted:

> Like global tectonic plates moving on a collision course, the world of scholarly journals—made up of authors, readers, librarians, and publishers—is headed for seismic upheavals that must result in major alterations in the landscape. Librarians, hit with declining budgets and escalating journal prices, are canceling subscriptions. Publishers, facing declining subscription

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[24] *See* HOUSE COMMITTEE ON APPROPRIATIONS, H.R. REP. NO. 108-188, at 89 (2003) (to accompany H.R. 2660) (expressing concern about lack of access to research data and rising subscription charges and asking for a report about potential remedies to alleviate such restrictive trends).

[25] U.S. CENSUS BUREAU, *R&D Expenditures: 1960-2000, in* STATISTICAL ABSTRACTS OF THE UNITED STATES, 2001 Table No. 767 (2001). The baseline figure for 1960 was $8.9 billion.

[26] U.S. CENSUS BUREAU, *Federal R&D Obligations to Selected Universities and Colleges: 1981 to 1999, in* STATISTICAL ABSTRACTS OF THE UNITED STATES, 2001 Table No. 775 (2001). The table also indicates that the top forty-five institutions receiving R&D funds accounted for 59.5% of the outlays in 1999. This percentage has remained relatively constant since 1981. In effect, this level of concentration is in fewer than forty-five institutions because Table No. 775 disaggregates certain large institutions into their component campuses (i.e., UC Berkeley, UCLA, UC San Diego, UCSF, and UC Davis are each listed separately as one of the top forty-five recipients).

[27] *See* PubMed, *at* http://www.pubmed.gov (on a search conducted July 31, 2003, the author entered the search term: Support, U.S. Gov't., Non P.H.S. OR Support, U.S. Gov't., P.H.S.).

> levels, raise rates to compensate, and then some. The increase in the output of research papers balloons the size and cost of journals. The vision of meaningful access to current information by scientists in developing countries is further off than ever. Fortunately, some solutions—in the form of digital publishing—are at hand.[28]

The massive concentration in the publishing industry and skyrocketing costs for technical and scientific journals are closely related. A recent economic analysis of the impact of publisher mergers concludes, "our results for journals sold by commercial publishers indicate that prices are indeed positively related to firm portfolio size, and that mergers result in significant price increases."[29] Another recent study conducted for the Information Access Alliance (IAI) concludes, "[b]y reducing competition and raising prices, publishers of STM and legal serial publications are forcing libraries to eliminate subscriptions and reducing broad access to research information."[30] The IAI report continues:

> While publishers continue to reap the benefits of higher prices (despite fewer subscriptions), the body of academic research is reaching an ever diminishing audience. The work of individual researchers, who do not receive compensation for publication, and without whom publishers would not have goods to offer, will suffer further if mergers of publishers continue unabated. The publishers, who provide a distribution channel for the work of others, are actually impeding that distribution to increase profits.[31]

These profit margins can be very high. *The Washington Post* reports that "figures released by the largest publisher of scientific journals – Amsterdam-based Elsevier – help explain why many scientists and others are frustrated. Its 1700 journals, which produce $1.6 billion in revenue, garner a remarkable thirty percent profit margin."[32]

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28 Alan M. Edelson, *On the Future of Scholarly Journals*, 280 SCIENCE 359 (1998), *available at* http://www.sciencemag.org/cgi/content/summary/280/5362/359a (last visited Sept. 22, 2004).

29 Mark J. McCabe, *The Impact of Publisher Mergers on Journal Prices: A Preliminary Report*, ARL NEWSL., Oct. 1998, *at* http://www.arl.org/newsltr/200/mccabe.html (last visited Sept. 22, 2004). *See also* Mark J. McCabe, *Academic Journal Pricing and Market Power: A Portfolio Approach*, http://www.prism.gatech.edu/~mm284/JournPub.PDF (last visited Sept. 22, 2004) (presented at the 2000 AEA meetings in Boston, MA).

30 THOMAS M. SUSMAN, DAVID J. CARTER, & THE INFORMATION ACCESS ALLIANCE, PUBLISHER MERGERS: A CONSUMER-BASED APPROACH TO ANTITRUST ANALYSIS 32 (June 2003), *at* http://www.informationaccess.org/WhitePaperV2Final.pdf (last visited Sept. 22, 2004).

31 *Id.*

32 Rick Weiss, *A Fight for Free Access to Medical Research Online Plan Challenges Publishers' Dominance*, WASH. POST, Aug. 5, 2003, at A1, *available at* http://www.washingtonpost.com/ac2/wp-dyn/A19104-2003Aug4?Language=printer (last visited Sept. 22, 2004).

The company does not dispute the figure, but believes it is justified. Elsevier Vice President Pieter Bolman said, "I do realize that the thirty percent sticks out . . . but what we still do feel—and this is, I think, where the real measure is—we're still very much in the top of author satisfaction and reader satisfaction."[33]

An earlier report published by the Association of Research Libraries (ARL), the American Association of Universities (AAU), and the Pew Higher Education Roundtable estimated that between 1986 and 1996, the consumer price index increased forty-four percent, the cost of monographs increased sixty-two percent, and the cost of scholarly journals increased one hundred and forty-eight percent.[34] The Pew Report explicitly linked the problems of publisher profits, copyright restrictions and barriers to access:

> The principle of requiring authors to assign copyright to a publisher had been standard even before commercial publishers had come to control so much of the industry. Because they do not conceive of the publication as providing direct financial benefit to themselves or their institutions, most scholars seeking the publication of their research have willingly agreed to what, on the surface, appears an inconsequential stipulation.
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> But the result is that universities and colleges, having made an

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[33] *Id.* The company is also very much in the top of compensation for its Executive Directors. According to the Reed Elsevier ANNUAL REPORTS AND FINANCIAL STATEMENTS 2002 the five Executive Directors received the following individual emoluments (salary, benefits, and bonus): Armour £689,127; Davis £1,366,543; Haank £563,240; Proze £1,030,820; and van de Aast £538,674; for a total of £4,188,404. REED ELSEVIER, ANNUAL REPORTS AND FINANCIAL STATEMENTS 2002, at 19, http://production.investis.com/ReedElsevierPlc/storage/annual02/annual02rep.pdf (last visited Sept. 22, 2004). In addition, the directors have received stock-options that have proven controversial. According to The Corporate Library, an independent investment research firm,

> Anglo-Dutch publisher Reed Elsevier will go ahead with a plan to award its directors GBP [Great Britain Pound] 20 million in stock options despite intense opposition for shareholder groups representing 49% of the British stock market. The National Association of Pension Funds (NAPF) said they would likely urge shareholder to either abstain or vote against the scheme, while the Association of British Insurers, which represents about 20% of the share market, said it has "concerns" about the plan. Reed CEO Crispin Davis could make GBP 8.3 million from his options, finance director Mark Armour will get GBP 4 million, directors Andrew Proze, Derk Haank and Gerard van de Aast stand to collect a total of GBP 8.1 million.

News Brief, Reed *Snubs Big Investors*, (Mar. 24, 2003), available at http://www.thecorporatelibrary.com/Governance-Research/news/03_19_03.html (last visited Oct. 26, 2004).

[34] Association of Research Libraries, Association of American Universities, and the Pew Higher Education Roundtable, *To Publish and Perish*, 7(4) POL'Y PERSP. (March 1998), *at* http://www.arl.org/scomm/pew/pewrept.html (last visited Sept. 22, 2004) [hereinafter *Pew Report*]. *See also UT Library Online: Serials Costs and Prices*, *at* http://www.lib.utexas.edu/admin/cird/issues/serials2.html (last visited Sept. 22, 2004) (discussing the general crisis and providing three pricing examples: J. COMP. NEUROLOGY – $6,719 per year in 1994 to $14,080 in 1999; J. APPLIED POLYMER SCI. – $4,869 per year in 1994 to $10,732 in 1999; TETRAHEDRON – $11,068 per year in 1994 to $22,019 in 1999).

initial outlay in the form of salaries and infrastructure to support faculty research, are then forced to pay exorbitant prices for the editing, production, and distribution functions that commercial publishers perform. While part of this latter expenditure covers legitimate costs of publication, the fastest-growing portion consists of the margin commercial publishers seek as profit. The constraints to the flow of scholarly information result not just from prohibitive pricing but from the restrictions that commercial publishers seek to impose on the kind of use an individual faculty member can make of his or her own published work.[35]

Jean-Claude Guédon provides a historical analysis of the serials crisis and reaches the similar conclusion that it has been caused by publishers:

> The so-called "serial pricing crisis" has been with us for a long time. Documented by librarians, denied by commercial publishers, its reality has finally been established as common knowledge and the behavior of commercial publishers and a few learned societies has been singled out as its major cause. Various spurious causes have also been disqualified, for example, the notorious currency fluctuations: reconciling a fluctuating phenomenon with monotonous growth is, to say the least, difficult . . . . Cost of living does not work either: journal prices have far outstripped this variable; they have even outstripped other sectors of publishing, thus demonstrating that the phenomenon, far from affecting the whole industry, touches only one very specific sector of it. The responsibilities are now clearly identified: they rest squarely on the shoulders of commercial publishers.[36]

At the same time, advances in information technology have enabled new models of scholarly publishing to emerge,[37] and elec-

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35 *Pew Report*, *supra* note 34. For additional sources on the serials crisis and the structure of the publishing industry, see *Special Issue on Journals*, ARL NEWSL., Oct. 1998, *at* http://www.arl.org/newsltr/200/200toc.html (last visited Sept. 22, 2004) (containing a collection of articles on the topic); and Barbara Albee & Brenda Dingley, *U.S. Periodical Prices—2002*, AM. LIBR., http://www.ala.org/Content/NavigationMenu/Products_and_Publications/Periodicals/American_Libraries/Selected_articles/U_S__Periodical_Prices,_2002.htm (last visited Sept. 22, 2004).

36 Jean-Claude Guédon, In Oldenburg's Long Shadow: Librarians, Research Scientists, Publishers, and the Control of Scientific Publishing, Creating the Digital Future: Proceedings of the 138th Annual Meeting of the Association of Research Libraries (May 23-25, 2001), *available at* http://www.arl.org/arl/proceedings/138/guedon.html (last visited Sept. 22, 2004).

37 *See* ANN OKERSON & JAMES O'DONNELL, SCHOLARLY JOURNALS AT THE CROSSROADS: A SUBVERSIVE PROPOSAL FOR ELECTRONIC PUBLISHING (1995); Rob Kling et al., *Locally Controlled Scholarly Publishing via the Internet:* The Guild Model, 8(1) J. ELECTRONIC PUB. (2002), http://www.press.umich.edu/jep/08-01/kling.html (last visited Sept. 22, 2004); Paul Ginsparg, *Creating A Global Knowledge Network (2001), at* http://www.unesco.org/science/publi-

tronic journals have proliferated.[38] As the ARL notes, "[t]he Internet, the World Wide Web, and digital technologies have revolutionized scholarly communication, leading to innovations in the conduct of research as well as in the conveyance of ideas to readers."[39]

While various initiatives have been undertaken in recent years to promote the open exchange of scholarly works,[40] significant barriers that hamper the goal of open access remain problematic. Mike Sosteric lists several such barriers, including the amount of work involved; the problem that editorial duties are not as highly regarded as publishing scholarly articles or books when tenure and advancement decisions are made; access to the system of scholarly communication is a guild-like system, mostly closed to all but the most established scholars; independent publishing continues to be viewed as an anomaly and questions remain about its quality; the deep sense of urgency needed to spur scholars into action is lacking; and the lack of organization required to create a broad, multidisciplinary coalition needed to revolutionize the scholarly communication system.[41] Despite emerging efforts, copyright restric-

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cation/electronic_publishing_2001/proceedings_sess3.shtml (last visited Sept. 22, 2004). For a thorough collection of citations to print and electronic sources about scholarly electronic publishing efforts, see Charles W. Bailey, Jr., *Scholarly Electronic Publishing Bibliography* (June 2003), *at* http://info.lib.uh.edu/sepb/sepb.html (last visited Feb. 2, 2004) (version 49 of the bibliography). The Association of Learned and Professional Society Publishers (ALPSP) maintains a bibliography on the economics of publishing at http://www.alpsp.org/htp_econ.htm (last visited Sept. 22, 2004).

[38] *See* Carol Tenopir & Donald W. King, *Lessons for the Future of Journals: Science Journals Can Continue to Thrive Because they Provide Major Benefits*, NATURE, Oct. 18, 2001, at 672-74, *available at* http://www.nature.com/nature/debates/e-access/Articles/tenopir.html (last visited Sept. 22, 2004) (estimating that "almost two-thirds of scientific journals are available both electronically and in print, and there are more than 1,000 electronic-only peer-reviewed journals.").

[39] Association of Research Libraries, *Issues in Scholarly Communication: Open Access*, http://www.arl.org/scomm/open_access (last visited Sept. 22, 2004). *See also* Steven Bachrach et al., *Intellectual Property: Who Should Own Scientific Papers?*, 281 SCIENCE 1459-60 (1998) (arguing that electronic communication has created new ways to distribute research results and is forcing researchers and publishers to reassess the old models of distribution).

[40] *See* Association for Research Libraries, *Framing the Issue: Open Access*, *at* http://www.arl.org/scomm/open_access/framing.html, and descriptions of various initiatives at http://www.arl.org/sparc, http://www.soros.org/openaccess, www.plos.org, and http://www.inasp.info (all sites last visited Sept. 22, 2004).

[41] *See* Mike Sosteric, *At the Speed of Thought: Pursuing Non-Commercial Alternatives to Scholarly Communication*, ARL NEWSL, Oct. 1998, *at* http://www.arl.org/newsltr/200/sosteric.html (last visited Sept. 22, 2004). Since 1998, at least the last two of these obstacles seem to be subsiding. *See also* Thomas J. Walker, *Free Internet Access to Traditional Journals: Can Scientists Find Ways to Share Published Research without High Cost?*, AM. SCIENTIST, *available at* http://www.americanscientist.org/template/AssetDetail/assetid/15595?fulltext=true (last visited Sept. 22, 2004). Walker argues that rather than ending the serials crisis, Web access to traditional journals may have intensified it:

> Publishers now offer licenses to electronic versions as add-ons to regular subscriptions. The Web versions enable library patrons to access and search the journals without leaving their office or laboratory computers, and many of

tions remain a substantial barrier to the realization of alternative models for open access. As the ARL notes "[c]hanges in copyright and other laws that govern the management and use of intellectual property have resulted in more limited access and more restrictive uses for copyrighted material. The current environment clearly favors commercial interests and limits the effective use of intellectual property for education and research."[42]

In recent years, there has indeed been a marked expansion of proprietary interests in copyright at the expense of educational and research uses.[43] Examples of this expansionary tendency include copyright term extension,[44] the anti-circumvention provisions of the Digital Millennium Copyright Act,[45] increased civil and criminal penalties for copyright infringement,[46] ongoing attempts

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> them are enhanced with extra material and sophisticated indexing and search capabilities. But there is of course a cost for this service. For example, the American Chemical Society offers libraries site licenses for the Web versions of its journals for 25 percent more than for paper subscriptions alone. Ironically, then, in these early stages of the Web's evolution some libraries are paying more for journals because they are paying for two versions and for the enhanced access expected as technology allows it. Although indeed they are providing more service and convenience, this is not the world of 'free' digital information envisioned by some prophets of the Internet.

Id.

42 Association of Research Libraries, *supra* note 39.

43 *See* P. Bernt Hugenholtz, *Copyright vs. Freedom of Scientific Communication*, 13 LEARNED PUB. 77 (2000) (reviewing recent developments in copyright policy in the digital environment, and arguing that in combination, the developments pose a serious threat to the freedom of scientific communication).

44 *See* Sonny Bono Copyright Term Extension Act, 17 U.S.C. § 302 (2000) (providing a twenty-year extension to the previous life-plus-50-years copyright term). *See* Eldred v. Ashcroft, 537 U.S. 186 (2003) (upholding the Act against constitutional attack).

45 17 U.S.C. § 1201 (2000) (providing that "no person shall circumvent a technological measure that effectively controls access to a work protected by this title," and also containing broad limitations on the manufacture and distribution of devices capable of circumventing technological measures that control access to protected works or that protect the rights of a copyright owner). *See* Pamela Samuelson, *Anticircumvention Rules: Threat to Science*, 293 SCIENCE 2028 (2001), *available at* http://www.sciencemag.org/cgi/content/full/293/5537/2028 (last visited Sept. 22, 2004) (arguing that the anti-circumvention rules are being used to inhibit science and stifle research); *see* Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to be Revised*, 14 BERKELEY TECH. L.J 519 (1999) (critiquing the anti-circumvention rules as overbroad and in need of revision); and *see also* Laura L. Mendelson, Comment, *Privatizing Knowledge: The Demise of Fair Use and the Public University*, 13 ALB. L. J. SCI. & TECH. 593, 603 (2003). Mendelson notes that:

> the DMCA and the judicial response to it have threatened the doctrine of fair use. Beyond the potential restrictions on scholarship, pedagogy, and education, the DMCA has moved copyright one step further away from fostering public access to knowledge, and one step closer to the privatization of knowledge. The DMCA, through its provisions, has changed the traditional law of copyright, as critics have urged, largely at the expense of users.

Id.

46 *See* No Electronic Theft Act, Pub. L. No. 105-147, 111 Stat. 2678 (1997) (eliminating the requirement of direct financial gain for criminal liability); *see* Lydia Pallas Loren, *Digitization, Commodification, Criminalization: The Evolution of Criminal Copyright Infringement and*

to enact new *sui generis* legal protections for databases and compilations,[47] and the growing internationalization of copyright standards along with the decreased ability of individual nations to maintain their own exceptions and limitations on owners' rights.[48]

Despite the significant shifts in the publishing landscape since 1976, it remains the normal practice for federal research grantors not to restrict the subsistence of copyright in the works their grantees produce. Once copyright attaches to a work, there can be significant negative consequences for downstream access to that work. A reevaluation of the practices of the funding agencies is indeed timely, given the scope of federal support for scientific research, the severity of the serials crisis facing academic libraries, the

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the Importance of the Willfulness Requirement, 77 WASH. UNIV. L.Q. 835 (1999). Loren argues "[i]f copyright law is to continue to advance its constitutionally mandated goal, the balance between the rights of copyright owners and the rights of the users of copyrighted works must not be weighted too heavily in favor of copyright owners." *Id.* at 836. Loren also notes, "[f]or copyright to continue to be an engine of free expression and a vehicle for promoting the progress of knowledge and learning, the appropriate interpretation of willfulness in the criminal infringement context is critical." *Id.* at 898. Note, *The Criminalization of Copyright Infringement in the Digital Era*, 112 HARV. L. REV. 1705, 1706 (1999). The author argues that "[b]y overdeterring private users, increased criminal penalties for copyright infringement will inhibit the free flow of information and thus impose costs that outweigh the benefits from discouraging piracy." *Id.*

47 *See* Database and Intellectual Property Antipiracy Act, H.R. 3531, 104th Cong. (1996); Collections of Information Antipiracy Act, H.R. 2652, 105th Cong. (1998); and Collections of Information Antipiracy Act, H.R. 354, 106th Cong. (1999). *See* Jerome H. Reichman & Pamela Samuelson, *Intellectual Property Rights in Data?* 50 VAND. L. REV. 5 (1997); Jerome H. Reichman & Paul F. Uhlir, *Database Protection at the Crossroads: Recent Developments and Their Impact on Science and Technology*, 14 BERKELEY TECH. L. J. 793 (1999); William Gardner & Joseph Rosenbaum, *Database Protection and Access to Information*, 281 SCIENCE 786 (1998), *available at* http://www.sciencemag.org/cgi/content/full/281/5378/786 (last visited Sept. 22, 2004); Steven Maurer & Suzanne Scotchmer, *Database Protection: Is it Broken and Should we Fix it?*, 284 SCIENCE 1129 (1999), *available at* http://www.sciencemag.org/cgi/content/full/284/5417/1129 (last visited Sept. 22, 2004); and Dovs Greenbaum, *Commentary: The Database Debate: In Support of an Inequitable Solution*, 13 ALB. L.J. SCI. & TECH. 431 (2003). Greenbaum argues against *sui generis* database legislation and concludes:

> [w]hile there are societal needs for databases, and as such, the government should support their growth, the social benefit created by maintaining a healthy public domain, and not privatizing information and facts, far outweighs the benefits provided by the database industry, and any subsequent loss of revenue or market following the implementation of a less favorable copyright regime.

Id. at 515.

48 *See* Marci A. Hamilton, *The TRIPS Agreement: Imperialistic, Outdated, and Overprotective*, 29 VAND. J. TRANSNAT'L L. 613, 614 (1996). Hamilton argues that

> [f]ar from being limited to trade relations, correcting the international balance of trade, or lowering customs trade barriers, TRIPS attempts to remake international copyright law in the image of Western copyright law. If TRIPS is successful across the breathtaking sweep of signatory countries, it will be one of the most effective vehicles of Western imperialism in history.

Id. *See* Samuel E. Trosow, *Fast-Track Trade Authority and the Free Trade Agreements: Implications for Copyright Law*, 2 CANADIAN J.L. & TECH. 135, 135-49 (2003). The author argues that a series of free trade agreements are being used to advance the agenda of the copyright industries to increase levels of copyright protection in an unduly expansionary manner.

emerging models for the distribution of scholarly research enabled by advances in information technology, and the general reluctance of the government to exercise its discretion in favor of the public domain.

C. *The Practices of the Funding Agencies*

To better frame the discussion about the proper scope of copyright in federally funded works, the practices of federal granting agencies will be reviewed briefly. Subsection 1 will examine the general standards used to govern copyright interests arising from federal grants. Two federal agencies, the National Institutes of Health (NIH) and the National Science Foundation (NSF), deserve particular scrutiny because of their central role in funding STM-related research; they will be considered in subsections 2 and 3, respectively. Subsection 4 will review the provisions of OMB Circular A-130, pertaining to the management of federal information resources.

1. General Grant Provisions Pertaining to Copyright

OMB Circular A-110[49] establishes uniform administrative requirements for federal grants and agreements awarded to institutions of higher education, hospitals, and other non-profit organizations. With respect to the treatment of copyright interests resulting from federal grants, the Circular provides:

> "[t]he recipient may copyright any work that is subject to copyright and was developed, or for which ownership was purchased, under an award. The Federal awarding agency(ies) reserve a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so."[50]

The requirement that federal agencies retain "a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so," is pervasive throughout the federal government. Provisions reserving this right are contained in regulations pertaining to grants from the Departments of Agriculture;[51] Commerce;[52] De-

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49 *See* OMB Circular A-110 Rev. 11/19/93 (amended Sept. 30, 1999), *available at* http://www.whitehouse.gov/omb/circulars/a110/a110.html (last visited Sept. 22, 2004) and http://clinton4.nara.gov/textonly/OMB/circulars/a110/a110.html (last visited Sept. 22, 2004).

50 *Id.* § 36(a).

51 7 C.F.R. § 3016.34 (2003).

52 15 C.F.R. § 24.34 (2003).

fense;[53] Education;[54] Energy;[55] Health and Human Services;[56] Housing and Urban Development;[57] Interior;[58] Justice;[59] Labor;[60] State;[61] Transportation;[62] and Veterans Affairs.[63] They are also contained in agency regulations pertaining to grants from the Corporation for National and Community Service;[64] Environmental Protection Agency;[65] Federal Emergency Management Agency;[66] Federal Mediation and Conciliation Service;[67] General Services Administration;[68] Institute of Museum and Library Services;[69] NASA;[70] National Archives and Records Administration;[71] National Endowment for the Arts;[72] National Endowment for the Humanities;[73]

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53 32 C.F.R. § 33.34 (2003).

54 34 C.F.R. § 80.34 (2003).

55 10 C.F.R. § 600.234 (2003).

56 45 C.F.R. § 92.34 (2003). *See also* 45 C.F.R. § 74.36 (2003) (pertaining to Health and Human Services awards to higher education, hospitals, and other nonprofit organizations).

57 24 C.F.R. § 85.34 (2003).

58 43 C.F.R. § 12.74 (2003). A separate provision applies to the Indian Self-Determination and Education Assistance Act Program. *See* 25 U.S.C. § 450 (2000) and following sections, administered by the Bureau of Indian Affairs. 25 C.F.R. § 276.11(g)(2) (2003) provides:

> Where the grant results in a book or other copyrightable material, the author or grantee is eligible to copyright the work if it is found that (i) the retention of the copyright is not precluded by statute and (ii) equity or the public interest is best served by doing so, by reason of special circumstances. If it is found that the public interest is best served by limiting the term of any copyright to be obtained, such limits shall be set forth in the grant agreement. 'Developmental' copyrights may be requested during the development, testing, or evaluation of copyrightable materials in order to prevent them from prematurely falling into the public domain. The copyright will be in accordance with copyright laws. However, the Government shall receive a royalty-free, nonexclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use the work for Government purposes. A copy of any copyright obtained by a grantee shall be provided to the Bureau. Program income received as royalties from copyrights on materials produced under grants is retained by the grantee during the grant period and is to be used according to the provisions of § 276.6(c). Specific agreements between the Bureau and the grantee shall be entered into before the grant is awarded to determine the uses of the royalty income after the grant is completed or terminated.

It is not clear why more stringent requirements apply to a grantee under this particular program in order for a copyright to subsist in a resulting work.

59 28 C.F.R. § 66.34 (2003).

60 29 C.F.R. § 97.34 (2003).

61 22 C.F.R. § 135.34 (2003).

62 49 C.F.R. § 18.34 (2003).

63 38 C.F.R. § 43.34 (2003).

64 45 C.F.R. § 2541.340 (2003).

65 40 C.F.R. § 31.34 (2003).

66 44 C.F.R. § 13.34 (2003).

67 29 C.F.R. § 1470.34 (2003).

68 41 C.F.R. § 105-71.134 (2003).

69 45 C.F.R. § 1183.34 (2003).

70 14 C.F.R. § 1273.34 (2003).

71 36 C.F.R. § 1207.34 (2003).

72 45 C.F.R. § 1157.34 (2003).

73 45 C.F.R. § 1174.34 (2003).

National Science Foundation;[74] Office of National Drug Control Policy;[75] Small Business Administration;[76] and Social Security Administration.[77]

The impact of this express reservation of rights is clear: authors/grantees cannot assign an interest that is greater than what they have. Given the express federal reservation of a nonexclusive interest, authors/grantees do not have a full and exclusive interest in the work. Any attempt to assign such an interest, or any attempt on the part of a publisher/assignee to demand that the author convey such an interest, or to claim such an interest after an assignment, would contravene the reserved rights of the federal government. Yet, in reality, it appears that this constraint is routinely ignored, and the parties simply go about arranging their transactions as if authors/grantees had full and unencumbered copyright interests to assign.[78] It also appears that the federal government does not protect its reserved rights or exercise them dili-

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74 45 C.F.R. § 602.34 (2003). *Compare* the provision in National Science Foundation, GRANTS POLICY MANUAL, *infra* note 101.

75 21 C.F.R. § 1403.34 (2003).

76 13 C.F.R. § 143.34 (2003).

77 20 C.F.R. § 437.34 (2003).

78 *See* John Cox & Laura Cox, *Executive Summary*, *in* SCHOLARLY PUBLISHING PRACTICE: THE ALPSP REPORT ON ACADEMIC JOURNAL PUBLISHERS' POLICIES AND PRACTICES IN ONLINE PUBLISHING, *available at* http://www.alpsp.org/news/sppsummary0603.pdf (last visited Sept. 22, 2004). The authors found that "[eighty-three] per cent of publishers still require authors to transfer copyright, although nearly [nine] per cent would accept a formal license to publish as an alternative." *Id.* at 7-8. *Cf.* Elizabeth Gadd et al., *RoMEO Studies 4: An Analysis of Journal Publishers' Copyright Agreements*, 16 LEARNED PUB. 293 (2003). The authors describe "an analysis of [eighty] scholarly journal publishers' copyright agreements with a particular view to their effect on author self-archiving. [Ninety percent] of agreements asked for copyright transfer and 69% asked for it prior to refereeing the paper. [Seventy-five] percent asked authors to warrant that their work had not been previously published although only two explicitly stated that they viewed self-archiving as prior publication. [Twenty-eight and one-half percent] of agreements provided authors with no usage rights over their own paper. Although 42.5% allowed self-archiving in some format, there was no consensus on the conditions under which self-archiving could take place." *Id.* at Abstract. *See also* Surf Foundation, *Copyright Management for Scholarship Website* (listing numerous agreements used by particular publishers), *at* http://www.surf.nl/copyright (last visited Sept. 22, 2004); *Elsevier Science Copyright FAQ*, *at* http://www.elsevier.com/wps/find/support.cws_home/requesttransfercopyright (last visited Sept. 22, 2004), stating:

> Elsevier Science wants to ensure that it has the exclusive distribution right, for all media. Such a right can be obtained through an exclusive license from authors, but there is virtually no difference between transfer and exclusive license. Given that there is virtually no difference, it seems to us that transfer does give an advantage in the elimination of any ambiguity or uncertainty about Elsevier Science's ability to distribute or sub-license.

See also John Willinsky, *Copyright Contradictions in Scholarly Publishing*, 7 FIRST MONDAY, Nov. 2002, *available at* http://firstmonday.org/issues/issue7_11/willinsky/#w1 (last visited Sept. 22, 2004). The author asks the question: "Why the publisher requires the complete transfer of ownership is not at all clear, when what is at issue for the journal is first publication rights." He answers it by stating: "The publisher's insistence on copyright transfer represents the business principle of maximizing the exclusivity of one's legal control over one's assets." *Id.* at 4.

gently on behalf of the public. OMB Circular A-110 and its related Code of Federal Regulations (C.F.R.) provisions represent a significant source of latent federal authority that could be used to enhance access to STM works.

2. The National Institutes of Health (NIH)

The NIH is an agency under the United States Department of Health and Human Services, and describes itself as "the Federal focal point for health research . . . [and] the steward of medical and behavioral research for the Nation."[79] The goals of the agency are to:

> 1) foster fundamental creative discoveries, innovative research strategies, and their applications as a basis to advance significantly the Nation's capacity to protect and improve health; 2) develop, maintain, and renew scientific human and physical resources that will assure the Nation's capability to prevent disease; 3) expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research; and 4) exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.[80]

Appropriations for the NIH have grown from $464,000 in 1938, to $2.3 billion in 1976, and to $23.2 billion in 2002.[81] In 2001, approximately 84% of its $20.3 billion in federal support was allocated to extramural research based on investigator-initiated applications that originate with individual scientists and result in Research Project Grants (RPGs). The extramural program dates back to 1946,

> when wartime government medical research contracts at universities and medical schools around the country were transferred to the NIH and converted into grants. The transfer was an important event, for it firmly established the importance of enlisting scientists in the country's medical schools and universities in the national research effort to understand disease and health.[82]

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[79] NATIONAL INSTITUTES OF HEALTH (NIH), NIH ALMANAC, *at* http://www.nih.gov/about/almanac (last visited Sept. 22, 2004).

[80] *Id.*

[81] NIH, NIH ALMANAC, *at* http://www.nih.gov/about/almanac/appropriations/part2.htm (last visited Sept. 22, 2004).

[82] NIH, *Setting Research Priorities at the National Institutes of Health*, *at* http://www.nih.gov/about/researchpriorities.htm (last visited Sept. 22, 2004).

In fiscal year 2000, the NIH funded approximately 35,000 RPGs.[83] In contrast to its in-house (or intramural) program, which accounts for about ten percent of its budget,[84] or special research and development contracts (where specific work is both requested and overseen by NIH staff), the recipients of RPGs are neither government employees nor work under the direct oversight of government employees.

The *NIH Grants Policy Statement* (NIHGPS) governs the "policy requirements that serve as the terms and conditions of NIH grant awards."[85] The NIHGPS sets forth the general principle that "[i]t is NIH policy to make available to the public the results and accomplishments of the activities that it funds. Therefore, PIs [primary investigators] and grantee organizations are expected to make the results and accomplishments of their activities available to the research community and to the public at large . . . ."[86] With respect to the copyright interest in works resulting from NIH grants, the NIHGPS provides broad rights to the grantee as the general default rule: "[e]xcept as otherwise provided in the terms and conditions of the award, the grantee is free to copyright without NIH approval when publications, data, or other copyrightable works are developed under, or in the course of, work under an NIH grant."[87]

The NIHGPS also permits subsequent assignment by the grantee for purposes of securing publication, subject to one important condition:

> Grantees may arrange for publication of initial reports of original research, supported in whole or in part by NIH grant funds, in primary scientific journals and for copyright by the journal unless the journal's copyright policy would preclude individuals from making or having made, by any means available to them without regard to the copyright of the journal and without royalty, a single copy of any such article for their own use (see 45 CFR 74.36 and 92.34).[88]

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83 *Id.* The NIH maintains a publicly accessible database known as CRISP (Computer Retrieval of Information on Scientific Projects). CRISP is a searchable database of federally funded biomedical research projects. *See* CRISP, *at* http://crisp.cit.nih.gov (last visited Sept. 22, 2004).

84 NIH, *supra* note 82.

85 NIH, NIH GRANTS POLICY STATEMENT 1 [hereinafter NIHGPS], *available at* http://grants2.nih.gov/grants/policy/nihgps_2001/nihgps_2001.pdf (revised Mar. 2001) (last visited Sept. 22, 2004).

86 *Id.* at 119.

87 *Id.* With respect to National Research Service Awards (NRSA), the NIHGPS separately provides, "except as otherwise provided in the conditions of the award, when publications or similar copyrightable materials are developed from work supported by NIH, the author is free to arrange for copyright without NIH IC approval." *Id.* at 190.

88 *Id.* at 120. The NIHGPS actually encourages grantees "to assert copyright in scien-

This provision attempts to ensure a reasonable level of public access to the work by ensuring that an assignee's copyright policy is not unduly restrictive. This usage proviso applies to members of the public at large, not simply those affiliated with research institutions. If a publisher utilizes the increasingly common practice of employing technological protection measures to restrict access to a work, the salutary objectives of this policy are vitiated; however, it is not clear how the NIH enforces the provision.[89]

The NIHGPS incorporates the language of OMB Circular A-110, placing a limit on the scope of the copyright interest that can be claimed by the author/grantee and his/her assignees. The NIH reserves the right to "be provided a royalty-free, nonexclusive, and irrevocable license for the Government to reproduce, publish, or otherwise use the material and to authorize others to do so for Federal purposes."[90] The NIHGPS contains the further requirement that "[o]ne copy of each publication resulting from work performed under an NIH grant-supported project must accompany the annual progress report submitted to the NIH awarding office."[91] Finally, the NIHGPS provides that "[u]nless specific terms and conditions of the award provide otherwise, NIH grantees are not required to account for income earned from copyrighted material."[92]

3. National Science Foundation (NSF)

The NSF is an independent agency of the United States government, established by the National Science Foundation Act of 1950,[93] as amended, and related legislation. A twenty-four member National Science Board, appointed by the President subject to Senate confirmation, governs the agency. Board members are selected on the basis of their eminence in basic, medical, or social sciences, engineering, agriculture, education, research management, or public affairs.[94]

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tific and technical articles based on data produced under the grant where this is necessary to effect publication in academic, technical, or professional journals, symposia, proceedings, or similar works." *Id.*

89 For a further discussion concerning the problems of technological protection measures, and the anti-circumvention provisions of 17 U.S.C. § 1201, *see infra* notes 226-27 and accompanying text.

90 NIHGPS, *supra* note 85, at 120 (tracking the language of 45 C.F.R. §§ 74.36 and 92.34 pertaining to the Department of Health and Human Services); *see also supra* note 56; OMB Circular A-110, *supra* notes 49-50.

91 NIHGPS, *supra* note 85, at 120.

92 *Id.* at 134.

93 Pub. L. No. 81-507, 64 Stat. 139 (codified as amended at 42 U.S.C. § 1861 (2000)).

94 *See* National Science Foundation (NSF), *at* http://www.nsf.gov/nsb/overview/about.htm (last visited Sept. 22, 2004). For an institutional history of the National Science Board,

The NSF is authorized:

> to initiate and support basic scientific research and programs to strengthen scientific research potential and science education programs at all levels in the mathematical, physical, medical, biological, social, and other sciences, and to initiate and support research fundamental to the engineering process and programs to strengthen engineering research potential and engineering education programs at all levels in the various fields of engineering, by making contracts or other arrangements (including grants, loans, and other forms of assistance) to support such scientific, engineering, and educational activities and to appraise the impact of research upon industrial development and upon the general welfare . . . .[95]

The agency is also charged with fostering "the interchange of scientific information among scientists and engineers in the United States and foreign countries."[96] Federal appropriations for the NSF have grown from $200,000 in fiscal year 1951, to $724.4 million in fiscal year 1976, and to over $5.3 billion in fiscal year 2003.[97] Although the NSF accounts for less than four percent of federal research and development spending, it supports nearly fifty percent of non-medical basic research at colleges and universities.[98]

According to the National Science Board, there has been a historical shift from internal government research to extramural activities supported by the government:

> [P]rior to World War II, support for research by the government of the United States was largely focused on government missions and carried out by Federal employees in Federal establishments . . . . The government role in supporting research in the scientific community at large was greatly stimulated by the vision enunciated by Vannevar Bush . . . . The Bush vision encouraged the mission agencies to support research universities in fields that were deemed to have probable long-term relevance to their

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see NSF, *The National Science Board - A History in Highlights 1950-2000* (NSB 00-215), http://www.nsf.gov/nsb/documents/2000/nsb00215 (last visited Sept. 22, 2004).

95 42 U.S.C. § 1862(a)(1) (2000).

96 *Id.* § 1862(a)(3).

97 *See NSF By Account, available at* http://dellweb.bfa.nsf.gov/NSFHist.htm (last visited Oct. 26, 2004).

98 NSF, FY 2004 BUDGET REQUEST TO CONGRESS: OVERVIEW, 2, *available at* http://www.nsf.gov/bfa/bud/fy2004/pdf/fy2004_2.pdf (last visited Sept. 22, 2004). Information for NSF awards made since 1989 is searchable at http://www-livecds.nsf.gov/awardsearch/index.jsp (last visited Sept. 22, 2004). The database can be used to search NSF Awards in full text, as well as through various indexed fields (unfortunately, the copyright status of resulting works is not one of the searchable fields).

> missions. It also led to the establishment of the National Science Foundation and the gradual building of its budget to the point that it has become a major source of support for science and engineering in our universities.[99]

This policy shift towards extramural funding was undertaken in recognition of the fact that researchers in university settings are best able to conduct basic research activities, working in an atmosphere most conducive to the values of open scientific inquiry.[100] While the government continues to employ researchers engaged in intramural activities, the increased emphasis on extramural research represents an alternative mechanism for the government to leverage external institutional resources and to derive better value for its funding investment. This historical shift is an important factor in the context of the current discussion because it seems anomalous that different copyright results should attach to works

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99 NATIONAL SCIENCE BOARD, *Government Funding of Scientific Research*, *in* 1999 AAAS SCIENCE AND TECHNOLOGY YEARBOOK, *at* http://www.aaas.org/spp/yearbook/chap19.htm (last visited Sept. 22, 2004). The reference to Vannevar Bush refers to his seminal report, SCIENCE THE ENDLESS FRONTIER: A REPORT TO THE PRESIDENT, JULY 1945, *available at* http://www.nsf.gov/od/lpa/nsf50/vbush1945.htm (last visited Sept. 22, 2004). In this report, written in response to a request from President Roosevelt, Bush stressed the need for the federal government to:

> strengthen the centers of basic research which are principally the colleges, universities, and research institutes. These institutions provide the environment which is most conducive to the creation of new scientific knowledge and least under pressure for immediate, tangible results. With some notable exceptions, most research in industry and Government involves application of existing scientific knowledge to practical problems. It is only the colleges, universities, and a few research institutes that devote most of their research efforts to expanding the frontiers of knowledge.

Id. at 2.

100 *Id.* at 14:

> Publicly and privately supported colleges and universities and the endowed research institutes must furnish both the new scientific knowledge and the trained research workers. These institutions are uniquely qualified by tradition and by their special characteristics to carry on basic research. They are charged with the responsibility of conserving the knowledge accumulated by the past, imparting that knowledge to students, and contributing new knowledge of all kinds. It is chiefly in these institutions that scientists may work in an atmosphere which is relatively free from the adverse pressure of convention, prejudice, or commercial necessity. At their best they provide the scientific worker with a strong sense of solidarity and security, as well as a substantial degree of personal intellectual freedom. All of these factors are of great importance in the development of new knowledge, since much of new knowledge is certain to arouse opposition because of its tendency to challenge current beliefs or practice. Industry is generally inhibited by preconceived goals, by its own clearly defined standards, and by the constant pressure of commercial necessity. Satisfactory progress in basic science seldom occurs under conditions prevailing in the normal industrial laboratory. There are some notable exceptions, it is true, but even in such cases it is rarely possible to match the universities in respect to the freedom which is so important to scientific discovery.

derived from government-supported research depending on whether the venue is intramural or extramural.

The *NSF Grants Policy Manual* (NSFGPM) implements the requirements and procedures for the award and administration of NSF grants.[101] Section 732.1(b) of the NSFGPM provides that, "[t]o preserve incentives for private dissemination and development, NSF normally will not restrict, or take any part of income earned from, copyrightable material except as necessary to comply with the requirements of any applicable government-wide policy or international agreement."[102] The NSFGPM sets forth a Standard Copyrightable Material Clause to be used in every NSF funding agreement relating to scientific or engineering research unless a special clause has been negotiated:

> Copyright Ownership, Government License. Except as otherwise specified in the grant or by this paragraph, the grantee may own or permit others to own copyright in all subject writings. The grantee agrees that if it or anyone else does own copyright in a subject writing, the Federal government will have a nonexclusive, nontransferable, irrevocable, royalty-free license to exercise or have exercised for or on behalf of the United States throughout the world all the exclusive rights provided by copyright. Such license, however, will not include the right to sell copies or photorecords of the copyrighted works to the public.[103]

Comparing this section of the NSFGPM with the requirement

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101 NSF, GRANTS POLICY MANUAL (NSF 02-151) (July 2002), [hereinafter NSFGPM], *available at* http://www.nsf.gov/pubs/2002/nsf02151/gpm02_151.pdf (last visited Sept. 22, 2004). Section 121 of the manual provides:

> This NSF *Grant Policy Manual* (GPM) sets forth NSF policies regarding the award and administration of grants and implements Office of Management and Budget (OMB) Circular A-110, *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations*, and 45 CFR § 602 (the Common Rule implementing OMB Circular A-102), *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments*. This Manual also implements other OMB Circulars, Public Laws, Executive Orders (E.O.) and other directives listed in Exhibit I-1 insofar as they apply to grants, and is issued pursuant to the authority of Section 11(a) of the NSF Act (42 USC § 1870).

Exhibit I-1 lists the various statutes, executive orders and other directives referred to or implemented in the manual.

102 *Id.* § 732.1(b).

103 *Id.* § 732.2(b). Comparing this language in the NSFGPM with the provision in 45 C.F.R. § 602.34, *supra* note 74, there appears to be a slight, yet potentially significant divergence. While the C.F.R. language expressly authorizes the government to "authorize others to use, for Federal Government purposes" the license it has reserved, the NSFGPM contains the additional express limitation that the license will not include the right to sell copies or photorecords of the copyrighted works to the public. To the extent that such a sale would fall within the meaning of a "Federal Government purpose," the NSFGPM seems to preclude an activity that is authorized in the C.F.R.

contained in the C.F.R.,[104] there appears to be a slight, yet potentially significant divergence. While the C.F.R. language expressly authorizes the government to "authorize others to use, for Federal Government purposes" the license it has reserved,[105] the NSFGPM contains the additional express limitation that the license will not include the right to sell copies or photorecords of the copyrighted works to the public.[106] To the extent that such a sale would fall within the meaning of a "Federal Government purpose," the NSFGPM seems to preclude an activity that is expressly authorized by the C.F.R.

The agency may alter the standard provision, as the section on Special Grant Provisions provides:

> At the request of the prospective grantee or on recommendation from NSF staff, a Grants Officer, with the concurrence of the cognizant Program Officer, may negotiate special patent or copyright provisions when he/she determines that exceptional circumstances require restriction or elimination of the right of a prospective grantee to control principal rights to subject inventions or writings in order to better achieve the objectives of the program, the National Science Foundation Act, or (in the case of inventions) Chapter 18 of Title 35 of the USC.[107]

It is not clear why a grantee would request a special provision restricting or eliminating his or her prospective rights. While NSF staff may invoke the special clause for "exceptional circumstances," the NSFGPM does not provide any concrete guidance as to what constitutes such circumstances.[108]

The NSFGPM goes on to state the expectation that:

> [i]nvestigators are expected to promptly prepare and submit for

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104 45 C.F.R. § 602.34 (2003) provides:

> The Federal awarding agency reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for Federal Government purposes: (a) The copyright in any work developed under a grant, subgrant, or contract under a grant or subgrant; and (b) Any rights of copyright to which a grantee, subgrantee or a contractor purchases ownership with grant support.

105 *Id.*

106 NSFGPM, *supra* note 101.

107 *Id.* § 733.1. Even if this clause is invoked, the grantee still has the opportunity under this section to retain intellectual property rights arising from the research:

> Every special copyright or patent provision will allow the grantee, after an invention has been made or copyrightable material created, to request that it be allowed to retain principal rights to that invention or material, unless doing so would be inconsistent with an obligation imposed on NSF by statute, international agreement or pact with other participants in, or supporters of, the research.

108 Compare the treatment of "exceptional circumstances" in this provision with that contained in 25 C.F.R. § 276.11(g)(2), *supra* note 58.

> publication, with authorship that accurately reflects the contributions of those involved, all significant findings from work conducted under NSF grants. Grantees are expected to permit and encourage such publication by those actually performing that work, unless a grantee intends to publish or disseminate such findings itself.[109]

Similarly, the NSFGPM states the further expectation that the retention of intellectual property interests by the grantee does not "reduce the responsibility that investigators and organizations have as members of the scientific and engineering community, to make results, data and collections available to other researchers."[110] However, this language is written in precatory terms, stating a general expectation, not an absolute legal requirement.

4. OMB Circular-130

OMB Circular No. A-130[111] "establishes policy for the management of Federal information resources"[112] and applies to "the information activities of all agencies of the executive branch of the Federal government."[113] The Circular defines the term "government information" as "information created, collected, processed, disseminated, or disposed of by or for the Federal Government."[114] As agencies of the executive branch of the federal government, both the NSF and NIH are subject to the terms of the Circular, which is premised on the assumption that:

> Government information is a valuable national resource. It provides the public with knowledge of the government, society, and economy—past, present, and future. It is a means to ensure the accountability of government, to manage the government's operations, to maintain the healthy performance of the economy,

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109 NSFGPM, *supra* note 101, § 734(a).

110 *Id.* § 734(d).

111 OMB Circular No. A-130, Revised, Transmittal Memorandum #4, Management of Federal Information Resources (11/28/2000), *available at* http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html and https://secure.cio.noaa.gov/hpcc/docita/files/omb_a_130_11292000.pdf (last visited Sept. 22, 2004).

112 *Id.* § 1.

113 *Id.* § 4(a). The Circular is issued under the authority, *inter alia*, of the Paperwork Reduction Act of 1980, Pub. L. No. 96-511 (amended by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13 (codified as amended at 44 U.S.C. ch. 35)); the Clinger-Cohen Act (Information Technology Management Reform Act of 1996), Pub. L. No. 104-106; and the Government Performance and Results Act of 1993 (GPRA), Pub. L. No. 103-62. *See* OMB Circular No. A-130, *supra* note 111, § 3.

114 OMB Circular No. A-130, *supra* note 111, § 6(h). Compare this definition of "government information" with the definition of "government publication" as contained in 44 U.S.C. § 1901 (2000) (meaning informational matter which is published as an individual document at government expense, or as required by law).

> and is itself a commodity in the marketplace.[115]

The head of each federal agency is directed by the Circular to "[e]nsure that the agency implements appropriately all of the information policies, principles, standards, guidelines, rules, and regulations prescribed by OMB,"[116] as well as to "[i]dentify to the Director of OMB any statutory, regulatory, and other impediments to efficient management of Federal information resources, and recommend to the Director legislation, policies, procedures, and other guidance to improve such management."[117] The broad definition of "government information" in section 6(b) of the Circular suggests that the results from government-funded research constitute "government information." This result should apply regardless of whether the results stem from intramural or extramural research.

Do the mandates of the Circular apply to the agency's choice of contractual terms pertaining to the copyright interests in the "information" that will be generated as a result of the grant? This question should turn on whether such activity constitutes an "information activity" within the meaning of section 4(a) of the Circular. If the Circular does apply to these activities, then it follows that current NIH and NSF practices are out of compliance with its explicit requirements. This interpretation of the reach of the Circular is consistent with the approach identified in recent Congressional testimony from the General Counsel for the United States Department of Commerce.

Commenting on legislation pending in the 106th Congress pertaining to the copyright-like treatment of databases and compilations, the General Counsel argued for a broad definition of "government information" along the lines of the definition contained in OMB Circular A-130, section 6(h):

> Instead of drawing a distinction between information directly generated by the government and information substantially funded by the government, we believe that the focus should be on the funding source. Information generated with public finances should be treated the same regardless of the vehicle used to generate the information.[118]

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115 OMB Circular No. A-130, *supra* note 111, § 7(b).

116 *Id.* § 9(a)(2).

117 *Id.* § 9(a)(9).

118 *Consumer and Investor Access to Information Act of 1999: Hearing on H.R. 1858 Before the House Subcomm. on Telecommunications, Trade, and Consumer Protection, Comm. on Commerce,* 106th Cong. (1999) (statement of Andrew J. Pincus, General Counsel, U.S. Department of Commerce).

Counsel made the similar point in testimony on a related bill:

> [W]e suggest that the Subcommittee examine existing definitions of "government information" for more inclusive descriptions of government-sponsored data collection. For example, OMB Circular A-130 states that the definition of "government information" includes information created, collected, processed, disseminated, or disposed of both by and for the Federal Government. In particular, we believe that the present language does not adequately cover situations in which the government contracts for or provides grants for information gathering.[119]

Thus, it is clear that neither the NIH nor NSF is properly exercising the full degree of its discretion existing by virtue of (1) the intent of Congress as evidenced in the legislative history to the Copyright Act of 1976,[120] (2) the applicable provisions in the C.F.R.,[121] (3) OMB Circulars A-110 and A-130, and (4) their own internal policy statements. Rather than read section 105 of the Copyright Act in isolation, all of these measures must be read together and harmonized to fully portray the current state of the law with respect to the copyright treatment of federally subsidized works. This synthesis is especially important since most of these measures postdate the enactment of the Copyright Act of 1976. Not only have the funding agencies failed to utilize their discretion to the fullest degree possible, they have also failed to enforce effectively what few restrictions on copyright explicitly exist. It is indeed fair to say that the agencies have abdicated their responsibility to mediate between the subsistence of transferable copyright interests and the interests of the public domain. As such, it is reasonable for Congress to step in and provide further guidance.

The preceding overview of the NSF and NIH, including their practices and procedures related to copyright interests, and their rights and obligations under OMB Circulars A-110 and A-130, helps to frame the subsequent discussion of the Sabo Bill in agency practice. Before turning to the provisions of the Bill itself, the next section will deepen this contextual background by reviewing briefly the purposes of copyright law in the United States.

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119 *Collections of Information Antipiracy Act: Hearing on H.R. 354 Before the House Subcomm. on Courts and Intellectual Property, Comm. on the Judiciary* (1999) (statement of Andrew J. Pincus, General Counsel, U.S. Department of Commerce).

120 *See supra* notes 10-15 and accompanying text.

121 45 C.F.R. §§ 602.34, 74.36, 92.34 (2003).

D. *The Purposes of Copyright Law*

Copyright law in the United States is rooted in the utilitarian notion that authors need to be provided with incentives to encourage them to engage in creative activity. The United States Constitution, Article I, Section 8, Clause 8 gives Congress the power to pass copyright laws for a particular purpose: "to promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." This constitutional language shows how the framers intended to limit the applicability of copyright; they wanted to limit congressional power in this area to serve particular ends (to promote the progress of science and useful arts), to extend only to certain categories of intellectual goods (writings and discoveries of authors and inventors), and to last only for a limited time.

Historically, economic analysis has played a crucial role in providing a framework to analyze these limitations and to inform the development of copyright policy. In their often-cited formulation of the economic justification for copyright law, William Landes and Richard Posner developed an economic model explaining copyright law as a means for promoting the efficient allocation of resources. This model is based on the presence of a trade-off between (1) limiting access to works and (2) providing incentives to create works.[122] The model is guided by the assumption that the law's "principal legal doctrines must, at least approximately, maximize the benefits from creating additional works minus both the losses from limiting access and the costs of administering copyright protection."[123] This trade-off is often referred to as the traditional "balancing" of interests between the rights of owners and users, and a recurring theme of copyright policy has been the search for the appropriate balance.

While much of the emphasis in copyright policy discussions focuses on the need to provide adequate incentives to encourage the production and distribution of new works, the problem is not just one of finding the floor. Finding the ceiling is important as

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[122] William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325 (1989).

[123] *Id.* at 326. *See also* Stanley Besen & Leo Raskind, *An Introduction to the Law and Economics of Intellectual Property*, 5 J. ECON. PERSP. 3, 5 (1991) (reiterating the justification for intellectual property laws that government needs to support innovation and encourage creative activity, and defining the objective of intellectual property rights as the creation of incentives that maximize the difference between the value of the intellectual property that is created and used and the social cost of its creation, including the cost of administering the system).

well because over-protecting intellectual property can be at least as harmful as under-protecting it. While over-protection will cause economic benefits to flow to those who own economic rights in intellectual property, it will unnecessarily hamper the distribution and use of works, harming the interests of users of information resources, including authors and researchers. Speaking to the importance of a vibrant public domain, Adam Segal argues that

> [c]reativity is impossible without a rich public domain. Nothing today, likely nothing since we tamed fire, is genuinely new: culture, like science and technology, grows by accretion, each new creator building on the works of those who came before. Over-protection stifles the very creative forces it's supposed to nurture.[124]

How should the trade-off, or balancing, that has historically informed copyright policy be applied to the question of works that have been supported by federal research dollars? The questions posed in the legislative history to the 1976 revision of the Copyright Act seem especially timely today in light of the changes that have occurred in the scope of federally supported research, the patterns of dissemination of those research results, and the general expansion of copyright in favor of proprietary interests.[125] For many, the availability of copyright in works reporting on the results of federally supported research seems to be a glaring loophole in section 105 that needs to be closed. But for a shrinking handful of commercial publishers, it represents an opportunity to increase their revenues and consolidate their grip on the scientific publishing enterprise.

II. The Sabo Bill: Substantive Provisions

In an attempt to revisit the question of access to federally subsidized works, Rep. Martin Olav Sabo (D-Minn) introduced H.R. 2613, the Public Access to Science Act, in the House of Representatives on June 26, 2003. The measure is very straightforward in its terms; it would add the following language to 17 U.S.C. § 105:

> (b) FEDERALLY FUNDED WORKS-
> (1) IN GENERAL- Copyright protection under this title is not available for any work produced pursuant to scientific research substantially funded by the Federal Government to the extent

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124 Adam Segal, *Zombie Copyrights: Copyright Restoration under the New § 104A of the Copyright Act*, 13 Santa Clara Computer & High Tech. L.J. 71, 72 (1997).

125 *See supra* notes 40-48 and accompanying text.

> provided in the funding agreement entered into by the relevant Federal agency pursuant to paragraph (2).
> (2) PROVISION IN FUNDING AGREEMENTS – Any Federal department or agency that enters into a funding agreement with any person for the performance of scientific research substantially funded by the Federal Government shall include in the agreement a provision that states that copyright protection under this title is not available for any work produced pursuant to such research under the agreement.
> (3) REGULATIONS – Each Federal department or agency that enters into funding agreements to which paragraph (2) applies shall issue regulations to carry out that paragraph.
> (4) DEFINITION – In this subsection, the term 'funding agreement' means any contract, grant, or cooperative agreement entered into between any Federal agency and any person for the performance of scientific research funded by the Federal Government. Such term includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of such research.[126]

The measure would not affect works in which copyrights already subsist; it would apply only prospectively.[127]

> The amendments are supported by a series of legislative findings that:
> (1) the United States Government funds basic research with the intention and the belief that the new ideas and discoveries that result from the research will improve the lives and welfare of the people of the United States and around the world;
> (2) works of the United States Government are beyond the reach of copyright protection so that they will be freely available for the benefit of the people of the United States;
> (3) the United States Government spends $45,000,000,000 a year to support scientific and medical research whose product is new knowledge for the public benefit;
> (4) the Internet makes it possible for this information to be promptly available not only to every scientist and physician who could use it to further the public good, but to every person with access to the Internet at home, in school, or in a library; and
> (5) United States Government funded research belongs to, and should be freely available to, every person in the United

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126 Public Access to Science Act, H.R. 2613, 108th Cong. § 3(a)(2) (2003) (to amend Title 17, United States Code).

127 *Id.* § 3(b): "(b) EFFECTIVE DATE- The amendments made by subsection (a) shall apply to any funding agreement (as defined in section 105(b)(4) of title 17, United States Code, as added by subsection (a) of this section), entered into on or after the date of the enactment of this Act."

States.[128]

In addition, the bill includes a statement that it is the "sense of the Congress" that:

> [A]ny Federal department or agency that enters into funding agreements (as defined in section 105(b)(4) of title 17, United States Code, as added by section 3(a) of this Act) should make every effort to develop and support mechanisms for making the published results of the research conducted pursuant to the agreements freely and easily available to the scientific community, the private sector, physicians, and the public.[129]

The findings in section 2 of the Sabo Bill attempt to resolve the policy questions raised in the 1976 revision to the Copyright Act[130] by relying on the purpose of federally funded research, the massive scope of such research, the availability of new technologies to support the open dissemination of this research, and an overriding statement of policy concerning the need for public ownership of the results of this research. Despite these broad findings, the bill does not go so far as to actually mandate public access in every case where research funds are disbursed.

While section 3(b)(2) requires that contracts for the performance of scientific research funded substantially by the federal government contain a provision that copyright will not be available for any work produced pursuant to that research, the term "substantially" is not defined. Agencies must promulgate regulations to carry out this provision. Presumably, these regulations will need to define what is meant by "substantial."

Reading current section 105 of the Copyright Act in isolation, there is no requirement for agencies to address the issue of copyrightability of subsidized works in any manner. Although Congress, as evidenced by the 1976 legislative history, indicated that exclusion of copyright might be appropriate in certain circumstances, the lack of a clear mandate for agencies to make these guidelines explicit has resulted in a situation where the creation of transferable copyright interests has become the default outcome. The requirement for agency-specific regulations will place applicants on notice of where the agency draws the threshold of "substantiality." In this way, researchers will be aware that they will not obtain transferable copyright interests in the works prepared as a result of the research, if they accept public funding. These regula-

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128 *Id.* § 2.
129 *Id.* § 4.
130 *See supra* notes 9-14 and accompanying text.

tions will also place potential assignees on notice that they will not obtain enforceable copyright interests in the published works.[131] Presumably, the regulations will be able to address additional issues that may arise, such as how to treat derivative works arising from the research results. The delegation of regulatory authority is mandatory, while at the same time, rather open-ended in terms of what the regulations should cover.

In his remarks in the *Congressional Record* accompanying the introduction of the bill, Rep. Sabo reiterates its legislative findings, stating that:

> The United States Government funds basic research with the intention and the belief that the new ideas and discoveries that result will improve the lives and welfare of the people of the United States and around the world. Our government spends $45 billion a year to support scientific and medical research whose product is new knowledge for the public benefit. We must remember that government funded research belongs to, and should be readily available to, every person in the United States. Lifting restrictions that prevent the widespread sharing of federally funded research can only speed scientific advancement.[132]

The bill is supported by the Public Library of Science (PLoS), which describes itself as "a non-profit organization of scientists and physicians committed to making the world's scientific and medical literature a freely available public resource."[133] PLoS argues that

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[131] Even a clear indication that copyright does not subsist in a particular work will not necessarily stop some commercial publishers from claiming exclusive interests in it. For example, a recent article in the journal MITOCHONDRION written by ten co-authors, all of whom are public employees, explicitly states in its first footnote: "This paper is a contribution of the U.S. National Institute of Standards and Technology (NIST), Armed Forces DNA Identification Laboratory (AFDIL), Federal Bureau of Investigation (FBI), the Georgia Bureau of Investigation (GBI) and the National Human Genome Research Institute (NHGRI), National Institutes of Health (NIH) and is not subject to copyright." Nonetheless, the notice "Copyright © 2003 Published by Elsevier Science B. V." appears at the top of the article. *See* Barbara C. Levin et al., *Comparison of the Complete mtDNA Genome Sequences of Human Cell Lines*, 2(6) MITOCHONDRION, June 2003, at 387-400.

[132] CONG. REC. E1380 (daily ed. June 26, 2003), *available at* http://frwebgate.access.gpo.gov (last visited Feb. 2, 2004).

[133] *See* Public Library of Science (PloS), *at* http://www.plos.org/ (last visited Sept. 22, 2004). Its Board of Directors includes Harold Varmus (the former director of the NIH and President of the Memorial Sloan-Kettering Cancer Center in New York), Lawrence Lessig (a Stanford Law School professor and founder of the Creative Commons), Michael B. Eisen (a computational and evolutionary biologist at the Lawrence Berkeley National Laboratory and the University of California, Berkeley), Brian Druker (of the Leukemia Center, Oregon Health & Science University), Pat Brown (of the Stanford University School of Medicine, Howard Hughes Medical Institute), Beth Weil (Head Librarian, Marian Koshland Bioscience & Natural Resources Library, University of California, Berkeley), Nicholas Cozzarelli (University of California, Berkeley), Allan Golston (of the Bill and Melinda Gates Foundation), Marc Kirschner (Harvard Medical School), and Paul Ginsparg (who is

> [t]he internet and electronic publishing enable the creation of public libraries of science containing the full text and data of any published research article, available free of charge to anyone, anywhere in the world. Immediate unrestricted access to scientific ideas, methods, results, and conclusions will speed the progress of science and medicine, and will more directly bring the benefits of research to the public.[134]

In addressing the need for the Sabo Bill, PLoS observes that "the current closed system of scientific publication places the narrow interests of publishers before the public interest and greatly diminishes the value of the more than $50 billion dollars invested by U.S. taxpayers each year in scientific and medical research."[135] PLoS co-founder Michael B. Eisen makes the further observation that "[i]t's a scandal that anyone is denied free access to the results of research paid for by their tax dollars [and that] the scientific community is denied the free and unfettered sharing of research discoveries upon which scientific and medical progress is built."[136] Margaret Reich, the Director of Publications for the American Physiological Society countered Eisen's argument:

> The argument underlying this bold proposal is that, as U.S. taxpayers, we have already paid for the science that is federally funded (such as research supported by grants from the NIH). Therefore, why should any of us, scientist and patient alike, have to pay again to read the results of that research? That sounds good, but some of my tax dollars also go to wheat and other farm subsidies, and I don't see anyone handing me free loaves

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best known as the developer of the Physics pre-print server, an early prototype of open access models of scholarly communication). *See* PloS, *About, at* http://www.plos.org/about/board.html (last visited Sept. 22, 2004).

134 *See* PloS, *at* http://www.plos.org (last visited Sept. 22, 2004).

135 Press Release, PLoS, *Public Library of Science Acts to Increase Public Access to Scientific Research; New Bill Will Ensure Public Access to Federally Funded Research Results* (June 26, 2003), *at* http://www.plos.org/news/announce_wings.html (last visited Sept. 22, 2004).

136 *Id. See also* Simon, *supra* note 16, at 425, arguing that

> exempting contractors [from the restriction on copyright contained in section 105] is inconsistent with the justifications that support the otherwise broad ban of section 105. While this internal inconsistency is itself troublesome, the exemption for federal contractors acquires heightened significance because it frustrates the policy of the copyright clause and exacerbates the inherent tension between copyright and the first amendment.

Id.; and that

> [b]ecause commissioned work resembles government work in many critical respects, the theories that justify the ban on copyrighting government work tend also to justify a ban on copyrighting commissioned work. . . . Copyright, however, permits owners to deny access to this information. The courts and Congress have determined that prohibiting government copyright best alleviates these concerns. To fully realize the values reflected in section 105, the no-copyright rule should similarly be extended to federal contractors.

Id. at 433.

of Wonder Bread.™[137]

As these comments suggest, the bill has generated some interesting exchanges within the publishing, scientific, and academic communities, and the next section will further analyze these discussions.

III. Initial Reactions to the Sabo Bill

While it is too early to fully assess the responses to the Sabo Bill by the various stakeholders, commentators, and other members of Congress, some initial indications are worth noting. Since the introduction of the bill in late June 2003, quite a bit of discussion has ensued within the academic, research, and publishing communities. This section will review and assess the initial reactions to the bill from the various stakeholders, including the commercial publishers, non-commercial publishers, universities, authors and researchers, and library associations.

A. *Commercial Publishers*

First, and not unexpectedly, the commercial publishing industry is strongly opposed to the bill. After all, the large commercial publishers are the direct beneficiaries of copyright assignments from authors. According to a recent article in *The Scientist*:

> Publishers say that a lack of copyright could destroy the incentive to produce works that bring science to the public, the exact opposite of what the bill's authors intended. Allan Adler, vice president of legal and government affairs for the Association of American Publishers, said the bill is so broadly written that it could apply not only to scientific research, but also to secondary descriptions of research in a popular science book or a Ken Burns documentary. "For some people, this will be a disincentive so that those books and documentaries don't even get written," said Adler.[138]

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[137] Margaret Reich, *Peace, Love, and PLoS*, 46 The Physiologist 137 (2003), *at* http://www.the-aps.org/news/PloS.pdf (last visited Sept. 22, 2004). Reich's comments may be taken as an admission that the publishers are indeed being subsidized. Furthermore, there are several distinctions between using a journal article and consuming a loaf of bread, the most obvious being the difference between rivalrous and non-rivalrous consumption. Another distinction is that the marginal costs of producing an additional unit of bread are very real compared to the marginal cost of providing another reader with access to an article in a networked environment, which approaches zero. Finally, while the value of the bread is depleted as it is consumed, the value of the article actually increases as it is cited and used in subsequent research.

[138] Catherine Zandonella, *Sabo Bill Assessed*, The Scientist (July 16, 2003), *available at* http://www.biomedcentral.com/news/20030716/04 (last visited Sept. 22, 2004). The article goes on to state,

Adler's claim is overstated because copyright law would continue to protect downstream adaptations of a work. Adler fails to recognize the distinction between the initial report of the research itself, and subsequent popularizations of it. A popular science book or a documentary film would certainly be considered original works in their own right, which is not anticipated by the Sabo Bill.

Some publishers have also questioned the need for broad public access to STM works. For example, former Elsevier chairman Derk Haank[139] was quoted as saying,

> [t]he material has to be available for the people who need it. And when I talk about people who need it, I am not talking about the general public, because we are talking here about scientific information, specialist information. People who want to use this and who need it are part of an institute. You don't do it as a self-proclaimed intellectual in your garden shed.[140]

Haank's skepticism of the need for public access to STM works is echoed by Elsevier's Vice President Pieter Bolman, recently quoted in *The Washington Post* as saying, "[t]his is, in general, very esoteric material . . . not written for the public."[141] Bolman adds that he doubts the business model will work: "[e]verybody is getting onto the open-access bandwagon. It reminds me of the enthusiasm and mania of the dot-com explosion, and it will pop, too."[142]

> [e]xperts on intellectual property law also refute publishers' claims that the federal government intends for researchers, and therefore publishers, to hold copyright so they could profit in a fashion similar to the manner in which universities profit from patents on federally funded scientific discoveries. "That argument is weak," said David Post, a professor of law at Temple University who consulted on the Sabo bill. "Scientists are not making money off copyright."

139 According to a Reed Elsevier statement,

> Derk Haank is to resign from Reed Elsevier with immediate effect. Mr Haank has been a director of Reed Elsevier and chief executive of the group's science and medical division.
>
> Mr. Haank plans, in early 2004, to take up the post of chief executive of Springer, the science and business publishing business acquired (subject to regulatory approval) by Cinven and Candover, the European buyout specialists.

Press Release, Reed Elsevier, *Reed Elsevier Announces Board Change* (June 18, 2003), *available at* http://www.reedelsevier.co.uk/index.cfm?articleid=616 (last visited Sept. 22, 2004).

140 Miriam A. Drake, *Free Public Access to Science—Will It Happen?*, INFO. TODAY (July 7, 2003), *at* http://www.infotoday.com/newsbreaks/nb030707-2.shtml (last visited Sept. 22, 2004) (citing Dick Kaser, *Ghost in a Bottle*, INFO. TODAY, Feb. 2002). To this assertion, Drake responds, "But, the parents who need information about their child's disease or the woman who wants the latest research results on breast cancer may not be part of an institute. They may not have access to a research library that subscribes to thousands of STM titles."

141 Weiss, *supra* note 32. A similar point was made by Peter D. Farnham, Public Affairs Officer for the American Society for Biochemistry and Molecular Biology, who said "most lay people would have difficulty making sense of technical articles on biomedical research." Jeffrey Brainard, *Lawmaker Introduces Bill to Make Research Papers Freely Available*, CHRON. HIGHER EDUC., June 27, 2003.

142 Weiss, *supra* note 32.

In contrast to Elsevier's dismissive attitude towards the need for public access to these works, a recent editorial in *The New York Times* states:

> Most of us, admittedly, will not have much use for free access to new discoveries in, say, particle physics. But it is a different matter when it comes to medical research. Popular nostrums abound on the Web, but it can be very hard, if not impossible, to find the results of properly vetted, taxpayer-financed science and in some cases it can be hard for your doctor to find them, too. The Public Library of Science could help change all that, creating open access to research. The publishers of scientific journals are naturally skeptical, but the real test will come in the marketplace of ideas.[143]

Bolman's comments, were also directly rebutted by a recent editorial in *The Sacramento Bee*:

> Such thinking seems more self-serving than public minded. Patients with serious health conditions don't find studies about potential new treatments esoteric in the least. Neither do scientists who can't afford to subscribe to every journal with relevant material. . . . Here's hoping that PloS succeeds and that Congress approves current efforts to improve public access to public research. If that happens, the public will win, too.[144]

It should also be noted that not all commercial publishers are opposed to the Sabo Bill, as some have been quite supportive of

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[143] Op-Ed, *Open Access to Scientific Research*, N.Y. TIMES (Aug. 7, 2003), *available at* http://www.nytimes.com/2003/08/07/opinion/07THU3.html (last visited Sept. 22, 2004).

[144] Editorial, *The Public's Research: Taxpayers Shouldn't Have to Pay Twice*, SACRAMENTO BEE (Aug. 19, 2003), http://www.sacbee.com/content/opinion/story/7253474p-8198511c.html (last visited Sept. 22, 2004). *See also The Susan G. Komen Breast Cancer Foundation Supports Efforts by Public Library of Science to Increase Public Access to Scientific and Medical Information, at* http://www.komen.org/intradoc-cgi/idc_cgi_isapi.dll?IdcService=SS_GET_PAGE&ssDocName=S_004179 (last visited Sept.22, 2004) (further articulating the need for public access to medical research:

> The Susan G. Komen Breast Cancer Foundation, a global catalyst in the fight against breast cancer, applauds Rep. Martin Olav Sabo (D-MN) who announced he is drafting legislation to back the Public Library of Science's efforts to increase public access to original scientific data. The Komen Foundation asserts that providing access to research – with both positive and negative findings – can be instructive for individual health decisions and strategies, as well as for the construct of further research.
>
> . . . 'It is critical that the public understands not only how to find information, but also how to make sense of it and put it into context.'
>
> Putting scientific information into context for public consumption is a cornerstone of the Komen Foundation's mission. Often people search for information while in the throws of an alarming diagnosis for themselves or a loved one and hear only what they want to hear. In an attempt to mitigate confusion, the Komen Foundation urges that the scientific and medical community continue to develop ways to help the public clarify and manage the available information, and draw conclusions for themselves.).

open access publishing efforts. For example, BioMed Central,[145] an independent publisher of biomedical and clinical journals, produces a newsletter entitled *Open Access Now*, which has been supportive of PLoS' efforts and the Sabo Bill.

B. *Non-commercial Publishers*

The second set of stakeholders, non-commercial publishers, includes the university presses as well as the various professional and scholarly societies that conduct publishing activities. This community has also reacted negatively to the bill. While they preface their opposition by conceding that there is a problem that needs to be addressed, they argue that the Sabo Bill itself is a misguided means to address these ends. According to a statement posted on the website of the American Association of University Presses (AAUP):

> Congressman Martin Sabo (D-MN) has introduced a bill, H.R.2613, to amend U.S. copyright law by declaring that copyright protection will no longer be available for work growing out of federally-funded scientific research. Titled "The Public Access to Science Act," the intention is honorable—to ease access to the results of government-funded research—but the method it proposes will do substantial harm to nopnprofit [sic] publishers.[146]

The AAUP statement also refers to a recent editorial by Michael Held, editor of the Rockefeller University Press (RUP), which opposes the bill.[147] Since Held's editorial is a useful exam-

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145 *See* BioMed Central, *at* http://www.biomedcentral.com (last visited Feb. 2, 2004). BioMed Central is an independent publisher of biomedical and clinical journals and information services. It publishes more than ninety peer-reviewed Open Access journals . . . . BioMed Central is part of the Current Science Group - a group of independent companies . . . . BioMed Central was established as an online Open Access publisher in May 2000 in response to the opportunities offered by new technologies, and to a strong feeling among scientists that the way research results are published must change. It was felt that open access to research is central to rapid and efficient progress in science.

Id. BioMed Central covers its publication costs through article-processing charges instead of subscription charges, and contributing authors retain the copyright in their works. The copyright and licensing agreement is posted at http://www.biomedcentral.com/info/about/license (last visited Sept. 22, 2004).

146 *See* American Association of University Presses (AAUP), *New Bill would Deny Copyright to Federally-Funded Scientific Research*, *at* http://aaupnet.org/news/copyrightnews.html (last visited Sept. 22, 2004).

147 Michael J. Held, *Proposed Legislation Supports an Untested Publishing Model*, 162 J. CELL BIOLOGY 171 (2003), *available at* http://www.jcb.org/cgi/reprint/162/2/171 (last visited Sept. 22, 2004). The AAUP webpage also refers to a second editorial, written by its Executive Director Peter Givler. Givler writes about the importance of copyright law, and why it operates to benefit the public good:

Copyright law changed two things. First, by giving authors legal control over

ple of the concerns being raised by publishers about the bill, it warrants being quoted at length. Held begins his article with a broadside against PLoS:

> It appears to me that this is a thinly veiled attempt by Harold Varmus and the other founders of the Public Library of Science (PLoS) to eventually force all publishers into their open access publishing model. As this publishing model is unproven and may well be unsustainable, this is an irresponsible act.[148]

Held continues by claiming some common ground with PLoS,[149] and then turns to his main claim—that the bill would destroy the subscription-based model utilized by his and similar institutions:

> I am certainly not opposed to much of what the PLoS advocates. We at RUP welcome another player in the publishing field, and wish them well in their mission of providing free content by relying on upfront fees and charitable contributions. However, to attempt to legislate the demise of the time-honored subscription-based business model, prior to proving that another model works, does not seem wise.[150]

Held repeats the claim that the Sabo Bill would destroy the print-based model and is hence premature and ill-advised:

> I see no reason at the present time to destroy the subscription model until we see that these new models can survive, any more than I see fit to kill off print immediately, solely because some want to, as opposed to waiting until the public says it is no longer needed. It is far better for all of us to work together cooperatively for the good of disseminating science, rather than to be in constant discord, thereby creating animosity among researchers, publishers, and librarians, and delaying progress.

> their own texts, it created a system for maintaining textual integrity, a public record of the authorized text to which other texts claiming authority could be compared. Second, and closely related, it created our modern sense of what the profession of author means: namely, to be someone whose reputation—and with luck, livelihood—rests on being recognized as the creator of the precise texts published under his or her name.

Id. These observations may be true, but they do not address the particular issue of whether § 105 should be expanded to also place works resulting from federally funded research directly into the public domain. Since Givler's piece predates the introduction of the Sabo Bill, and does not directly deal with its contents, the subsequent discussion will focus on the editorial by Held.

148 *Id.* at 171.

149 "The various models for open access by groups such as PLoS, Scholarly Publishing and Academic Resources Coalition (SPARC), CreateChange, E-BioSci, and BioMed Central, among others, are honorable, noble experiments in dealing with the current publication dilemma." *Id.*

150 *Id.*

> Those of us in the nonprofit sector are the natural allies of "open access." This is especially true for the large cadre of scientists who have for years donated extraordinary amounts of their expertise, time, and dedication to advancing the essential cause of free and open scientific communication, and done so long before PLoS appeared on the scene.[151]

Eventually, Held confronts the terms of the Sabo Bill itself by focusing on its effect on the traditional publishing business model:

> The Sabo legislation would force scientific publishers into the PLoS open access model, because as soon as we publish anything funded by the United States Government it would be available for anyone else to republish or repurpose in any form once they gained access to our online or print editions. Anyone could then post it to any open access site, or a commercial publisher could also post it, claiming huge amounts of data available at one location, clearly an advantage to the librarian. What would then be the incentive or value to publishers that need to rely on a proper business model rather than on charitable contributions as PLoS is currently doing?[152]

Held's arguments are reminiscent of the claims made by the large legal publishers that they should hold exclusive rights in their compilations of case law generated by the courts. He goes on to argue that the bill would overturn copyright principles that are necessary in order to protect authors' works:

> Sabo's draft legislation is in effect overturning legislation that was put in place to protect an author's works, i.e., copyright law. RUP continues to hold copyright to prevent misuse of the materials by third parties or commercial organizations, and as part of this duty we handle permissions on the authors' behalf. However, we allow authors unrestricted use of their own materials for any purpose, and we encourage them to post the pdfs of their articles on their or their university's web sites.[153]

This claim in the last sentence is no doubt accurate with respect to the practices of the many non-profit university presses that allow authors to retain considerable usage rights in their works. But many copyright assignees are not so benevolent, and Held does not address the discrepancy between the practices of his institution and those of the many commercial publishers that acquire and enforce the full scope of the owners' rights in copyright. And treatment of

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151 *Id.*
152 *Id.* at 172.
153 Held, *supra* note 147.

authors aside, Held does not acknowledge the broad similarities between his practices and those of the commercial publishers with respect to third parties; especially members of the public who are not affiliated with large research institutions.

Held never explains why the bill would signal the demise of the subscription model, a claim that has been repeated by other societies engaged in publishing efforts. If subscription-based publishers add significant value to research results by producing accurate compilations of articles in a timely manner, providing for the peer review process, providing long-term preservation functions, and providing other ongoing services to authors, then they should be able to survive the effects of the Sabo Bill. Losing the exclusive right to publish a particular article should not in itself destroy the subscription model if these other functions are being performed in a way that adds significant value to the publishing process for authors and users. As Sally Morris, Secretary-General of the Association of Learned and Professional Society Publishers, points out:

> One thing seems certain: the journal adds value to research information in many ways, and authors and readers want this value to persist in any new economic environment. The journal itself is no longer a physical object containing articles. It is, however, still a very important entity – an 'envelope', if you like, which contains, and acts as a kind of shorthand for, content of a particular kind. The content is not just selected for its soundness – that is not, of course, all that referees are looking for. It is also selected because it is interesting, important and relevant – in the personal view of a particular editor or editorial team, whose opinions the readers respect – to a given readership. That is why browsing the particular collections of articles in a handful of favourite journals remains equally as popular as searching, as a means of identifying articles worth reading.[154]

Even if the copyright were removed from individual articles, publishers would still retain substantial copyright interests in their publications. A collection of articles into a journal constitutes a compilation, which enjoys copyright protection in its own right by virtue of the originality evidenced in the selection and arrangement of its components.[155] This copyright protection is separate

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[154] Sally Morris, 16 LEARNED PUB. 171, 174 (2003), *at* http://www.alpsp.org/2003pdfs/smjul03.pdf (last visited Sept. 22, 2004).

[155] *See* 17 U.S.C. § 101 (2000), definition of compilation: "A 'compilation' is a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. The term 'compilation' includes collective works." *See also* Feist Publ'ns v. Rural Tel. Serv. Co., 499 U.S. 340 (1991) (while facts are not original

and apart from the copyright status of the components of the compilation. In the post-Sabo world, a typical journal issue would include some articles in which copyright subsists and some articles which are in the public domain. Held's assumption that passage of the bill would signal the demise of the subscription model clearly overstates the impact of the Sabo Bill and the challenges that subscription-based publishers in the post-Sabo world would face.

Publishers affiliated with non-profit scientific societies face the dilemma that while they want research results to be readily available to their members, they are also reliant on subscription revenues to support the work of their associations. As the Federation of American Societies for Experimental Biology (FASEB) argues:

> The bill threatens to destroy the current field of scientific publishing and will harm scientific societies that rely on publishing revenues to support other professional activities. By denying copyright protections to scientists and their publishers, H.R. 2613 will dramatically reduce publishing revenues without reducing the costs of scientific publishing. These revenues are necessary for numerous steps (reviewing of manuscripts, redacting, archiving, etc.) required in the publishing process. Also, we believe that copyright affords important protection for the scientific literature. Both for-profit, and non-profit scientific publishers will be unable to continue to provide these services.[156]

The International Society for Biological and Environmental Repositories (ISBER) raises the same concern:

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and not subject to copyright, compilations may be protected as a work formed by the collection and assembling of preexisting materials that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship); David Post, *Copyright, Scientific Research, and the Public Access to Science Act* (Sept. 5, 2003 manuscript at 9), *at* http://www.temple.edu/lawschool/dpost/CopyrightandPASA.PDF (last visited Sept. 22, 2004). Arguing that the Sabo Bill would not defeat the compilation right, Post says

> copyright law recognizes (and rewards) the separate act of creativity involved in deciding which articles will be included in any issue of the Journal of Cell Biology. This is what's known in the law as the 'compilation copyright.' The compilation copyright belongs not to the authors of the individual articles but to the editor(s) or publisher(s) – to whoever it is who is in fact making these critical editorial decisions. This copyright is entirely independent of the copyright protection for the individual articles; it is not meant to protect the text of the articles themselves, but the selection of the particular collection of articles contained in the journal from among the universe of possible articles. PASA will not affect this compilation copyright in any way.

Id. Post further notes that the compilation right would be defeated only if the journal itself was a work "substantially" funded by the Federal Government. *Id.*

156 Letter from Robert D. Wells, President, Federation of American Societies for Experimental Biology, to Rep. Martin Olav Sabo (D-Minn) (July 23, 2003), *available at* http://www.faseb.org/opar/news/docs/sabo.pdf (last visited Sept. 22, 2004).

> Even though publication and subscription costs associated with paper journals create hardships for many laboratories, especially during times of limited financial resources, many professional societies rely on journal subscription revenues to offset their operating expenses. Legislation like PASA could therefore have negative consequences for science, while attempting to broaden access to publicly funded research.[157]

Jan Velterop summarizes the dilemma facing scholarly societies by posing the question:

> [D]o they see themselves as a fundraising entity, publishing journals to make money that is subsequently used to further their discipline in some other way, or do they see themselves as an entity focused on direct promotion of their discipline by means of making their journals, and their author-members, and their society, more visible and useful for science and the world via open access?[158]

He concludes by arguing, "[f]or societies that make the latter choice, practical help is available, not least from the company whose publisher is the author of this article, to reduce or even eliminate financial risks and make conversion of an existing journal into an open access one a smooth and professional process."[159]

John Willinsky poses a similar question that scholarly associations must face: "[t]he scholarly association has, then, to put the question to its membership: Is this organization devoted to maintaining its current revenue levels or is it devoted to serving the professional interests of its members in fostering the greater development and circulation of knowledge?"[160] Relying on a study

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[157] 3 ISBER NEWSL., Summer 2003, *at* http://www.isber.org/newweb/newsletters/Summer2003Newsletterweb.pdf (last visited Sept. 22, 2004). The same argument is raised by the Ornithological Societies of North America (OSNA). *See* 155 ORNITHOLOGICAL NEWSL. ONLINE, Aug. 2003, *at* http://birds.cornell.edu/OSNA/155.htm (last visited Sept. 22, 2004) (arguing that the bill "could jeopardize journal subscriptions by making all articles reporting publicly-funded research exempt from copyright protection. This bill would allow anyone to copy and post publicly-funded articles on internet sites, or even sell copies of those articles for profit," and noting that "[t]he Ornithological Council is consulting with its member societies about their views on the issue, and is recommending to its member societies that the OC ask Rep. Sabo to consider adding a provision that would exempt societies below a certain revenue level.").

[158] Jan Velterop, *Should Scholarly Societies Embrace Open Access (Or is it the Kiss of Death)?*, 16 LEARNED PUB. 167, 169 (2003), *at* http://www.alpsp.org/2003pdfs/jvjul03.pdf (last visited Sept. 22, 2004).

[159] *Id. See also* Thomas Walker, *Two Societies Show How to Profit by Providing Free Access*, 15 LEARNED PUB. 279 (2002) (pointing to publications of the Florida Entomological Society and the Entomological Society of America as offering immediate free web access (IFWA) and also maintaining revenues); Walker, *Free Internet Access to Traditional Journals*, *supra* note 41.

[160] John Willinsky, *Scholarly Associations and the Economic Viability of Open Access Publishing*,

of citation patterns showing that articles freely available online are more highly cited,[161] Willinsky argues that the move towards open access models would be in the true interest of association members. While the reliance on subscription revenues by scholarly associations has been understandable, and while this reliance helps explain their unease about the Sabo Bill, Veletrop and Willinsky make compelling arguments that the need for revenues should not drive access policies. This reliance certainly should not drive copyright policy.

C. *Universities and Colleges*

The third set of stakeholders to be discussed is the university and college community. They are represented by a variety of associations including the Association of American Universities (AAU),[162] the National Association of State Universities and Land Grant Colleges (NASULGC),[163] the National Association of Independent Colleges and Universities (NAICU),[164] and the American Association of Community Colleges (AACC).[165] Of these groups,

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4 J. DIGITAL INFO. (2003), *at* http://jodi.ecs.soton.ac.uk/Articles/v04/i02/Willinsky/ (last visited Sept. 22, 2004).

161 Steve Lawrence, *Online or Invisible?*, 411 No. 6837, at NATURE 521 (2001), *available at* http://www.neci.nec.com/~lawrence/papers/online-nature01 (last visited Sept. 22, 2004).

162 *See* Association of American Universities (AAU), *at* http://www.aau.edu (last visited Sept. 22, 2004). Membership in the AAU is highly selective, and is granted by invitation. "The association maintains a standing Membership Committee, which periodically evaluates non-member universities for invitation to membership, and evaluates current members to assure that their institutional missions, and the fulfillment of those missions, remain consonant with the character and purpose of the association." AAU Membership Policy, at 1, *at* http://www.aau.edu/aau/Policy.pdf (last visited Sept. 22, 2004). In making its assessments for membership, the AAU utilizes a series of "Membership Principles" and a two-phase set of quantitative "Membership Indicators." *Id.* at 2-3.

163 *See* National Association of State Universities and Land Grant Colleges [hereinafter NASULGC], *at* http://www.nasulgc.org/About_Nasulgc/about_nasulgc.htm (last visited Sept. 22, 2004):

> As of July 2003, the association's membership stood at 211 institutions. This includes 76 land-grant universities (36% of NASULGC's membership), of which 17 are the historically black public institutions created by the Second Morrill Act of 1890, and 27 public higher education systems (12% of NASULGC's membership). In addition, tribal colleges became land-grant institutions in 1994 and 31 are represented in NASULGC through the membership of the American Indian Higher Education Consortium (AIHEC).

Id.

164 *See* National Association of Independent Colleges and Universities [hereinafter NAICU], *at* http://www.naicu.edu/about/index.shtml (last visited Sept. 22, 2004):

> With nearly 1,000 members nationwide, NAICU reflects the diversity of private, nonprofit higher education in the United States. Members include traditional liberal arts colleges, major research universities, church- and faith-related institutions, historically black colleges and universities, women's colleges, performing and visual arts institutions, two-year colleges, and schools of law, medicine, engineering, business, and other professions.

Id.

165 *See* American Association of Community Colleges, [hereinafter AACC], *at* http://

only the AAU has issued a statement on the Sabo Bill as of February, 2004.

Like the University Press publishers, the AAU acknowledges some common ground with the principles underlying the Sabo Bill. Yet it seems primarily concerned with how the bill would affect its business models and the downstream use of research results. It is especially uneasy about removing copyright protections from university-generated works, a sentiment reflected in a statement by its Executive Vice President, John Vaughn that "[u]ntil a workable model is available, it would be premature to jettison copyright . . . [w]e need an orderly transition."[166]

The AAU's formal position is reflected in its July 18, 2003 letter to Rep. Sabo, in which it explains its opposition to the bill.[167] Like Held's editorial, the AAU acknowledges common ground with the underlying objectives of the legislation – the enhancement of public access to research results. However, it believes that the "denial of copyright protection for publications resulting from federally funded research, the primary tool contained in the bill, not only is unnecessary for the achievement of this objective, but may also prove quite harmful to the nation's research enterprise . . . ."[168] The AAU claims that federal agencies already require that the results of funded research be made publicly available, since they are published through a large and expanding number of sources.

The AAU expresses concern that the loss of copyright in the works could seriously impair existing publishing arrangements, an effect that it claims would diminish access. It points to copyright protection as an "important means of assuring the accuracy and authenticity of publications, and is important in maintaining other critical aspects of the publishing process, including not only initial dissemination of research results, but also compilation and dissemination of derivative works, and archiving of works essential to preserving the scientific record."[169]

The AAU letter raises the additional concern that the bill, as

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www.aacc.nche.edu/Content/NavigationMenu/AboutAACC/Mission/Our_Mission_Statement.htm (last visited Sept. 22, 2004) ("The American Association of Community Colleges is the primary advocacy organization for the nation's community colleges. The Association represents more than 1,100 associate degree-granting institutions and some 10 million students.").

166 Zandonella, *supra* note 138.

167 Letter from Office of the President, AAU, to Rep. Martin Olav Sabo (D-Minn) (July 18, 2003), *available at* http://www.aau.edu/intellect/Sabo7.18.03.pdf (last visited Sept. 22, 2004).

168 *Id.*

169 *Id.*

written, would apply to computer software as well as scientific publications. It expresses fear that the loss of copyright in software would diminish the incentives for universities to collaborate in technology transfer, limiting their ability to move the results of research into commercial development. The AAU argues that the bill would conflict with the Bayh-Dole Act of 1980,[170] which it characterizes as highly successful because it has facilitated the commercial development of university research.

There are several problems with the AAU's arguments as presented in its letter. First, in making the claim that agencies already require that research results be made publicly available, it fails to distinguish between the notion of a work being "publicly available" and the broader concept of actual accessibility. A copyrighted work may be published in an expensive journal subscribed to by only a select group of research libraries. That work may be publicly available, but it is not broadly accessible. The AAU concedes that access to this research is becoming more difficult, in part because of the rapidly increasing costs of journals, particularly those published by some commercial publishers.

Second, as to its claim that the loss of copyright could impair existing publishing arrangements (thereby diminishing access because copyright is an important means of assuring the accuracy and authenticity of publications), the AAU is including a highly expansionary mission among the purposes of copyright – one well beyond providing incentives for authors to create works. An author can write a work that is highly inaccurate, and copyright will still subsist in the work. It might not pass muster under peer review, but it will nonetheless be a work protected by copyright. And while the authenticity of documents is an important concern, especially in the digital environment where it is easier to alter the contents of work as it flows through cyberspace, copyright protection is neither a necessary nor a sufficient condition for authenticity to be assured.[171] While the appearance of a work in a well-respected print-based journal has traditionally been a recognized mark of authenticity, this quality is due to a variety of factors beyond copy-

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170 *See* Patent Rights in Inventions Made with Federal Assistance, Pub. L. No. 96-517, 94 Stat. 3015. The stated purposes of the Act include: "to use the patent system to promote the utilization of inventions arising from federally funded research or development" and "to promote collaboration between commercial concerns and nonprofit organizations, including universities . . . ." 35 U.S.C. § 200 (2000).

171 *See* Kelly Kunsch, *Diogenes Wanders the Superhighway: A Proposal for Authentication of Publicly Disseminated Documents on the Internet*, 20 SEATTLE U. L. REV. 749 (1997) (providing an overview of the problem of authenticity; identifying the three components of authentication as origin, integrity, and currency; and discussing various solutions to the authenticity problem).

right. The fact that a journal holds a copyright interest in the works it publishes is separate and apart from the quality of its editorial and production process. It is true to say that many high quality subscription-based journals hold exclusive copyright interests in the works they publish; it is quite another matter to impute causality to this relationship. Quality works that are in the public domain continue to be published and disseminated, both in print and in electronic formats. So while accuracy and authenticity are important goals of any publishing model, it is a stretch to argue that these values are dependent on the copyright status of the subject works. The copyright-related interest that is most directly related to assuring the accuracy and authenticity of downstream distributed works is the author's moral right in integrity,[172] a right not recognized by United States copyright law.

In attributing such broad purposes to copyright, the AAU seems to be conflating the historical purposes of copyright with other requirements of the scholarly publishing enterprise. In any event, the AAU does not follow through on its argument that the Sabo Bill would hamper the salutary goals of accuracy, authenticity, and the creation of downstream compilations.[173] The reader of the AAU letter is left to guess how these bad effects would actually take place. The related claim that copyright is an important means of disseminating research results and essential to preservation, both initially and through the downstream compilation and archiving processes, fails to account for the distinction between copyright in underlying works and copyright in a compilation, an issue discussed in the previous section.[174]

Third, the reference to a conflict with Bayh-Dole as grounds for opposing the bill is particularly instructive. It demonstrates an overriding concern of the Association with the ability of its members to exploit the results of their work commercially; this concern is at odds with its opening comment that its members share the general objective of making research results more accessible to the public. While a full analysis of the Bayh-Dole Act and broader treatment of the issue of commercialization of university research

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172 *See infra* notes 189-90.

173 *See supra* note 162 and accompanying text. A copyright may subsist in a compilation even where there is no copyright in the individual constituent elements. The phone book taken as whole and edited anthologies of works in the public domain are two examples. The question of whether copyright would subsist in a subsequent compilation by reason of its originality in the selection and arrangement of its component elements is not treated by the bill and it is clearly a stretch to argue that the bill would hamper the preparation of downstream compilations. *Id.*

174 *See supra* note 155 and accompanying text.

is beyond the scope of this paper, the matter warrants at least a passing response for several reasons.

First, the appropriateness of the Bayh-Dole Act is itself the subject of intense dispute, and for many commentators, it has only served to further the commercialization of the university in ways that are neither in the public's interest nor consistent with the traditional values of the academy.[175] As Eyal Press and Jennifer Washburn observe, "[w]hat is ultimately most striking about today's academic-industrial complex is not that large amounts of private capital are flowing into universities. It is that universities themselves are beginning to look and behave like for-profit companies."[176] Public Knowledge, a D.C.-based public interest group,[177] argues that

> universities are becoming patenting factories that fuel propertization rather than remaining wellsprings of independent research. In addition, although Bayh-Dole commerce was intended to benefit the public by allowing university research to become available to private entities, exclusive licenses and overpropertization of technology has actually caused most technologies to become costly, and less available, to the public.[178]

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175 *See* Arti K. Rai & Rebecca S. Eisenberg, *Bayh-Dole Reform and the Progress of Biomedicine*, LAW & CONTEMP. PROBS., Winter-Spring 2003, at 289 (arguing that the *Bayh-Dole Act* should be reformed to give funding agencies greater discretion to determine when to require that publicly-funded research discoveries be dedicated to the public domain); Ted Agres, *The Costs of Commercializing Academic Research: Does University Licensing Impede Life Science Research and Development?*, 17 THE SCIENTIST, (Aug. 25, 2003), *at* http://www.the-scientist.com/yr2003/aug/prof1_030825.html (last visited Feb. 2, 2004) (reviewing arguments that Bayh-Dole may hinder research by restricting the transfer of research tools, causing delays in dissemination of research results, and encouraging the use of broad patent claims to restrict the research and development activities of others); Robert Berring, *Is Berkeley Off Course?*, CAL. MONTHLY, Feb. 1999, *available at* http://www.alumni.berkeley.edu/Alumni/Cal_Monthly/February_1999/Is_Berkeley_off_course.asp (last visited Sept. 22, 2004) (questioning the increased commercialization of research at UC Berkeley as detrimental to the values of the public university).

176 Eyal Press & Jennifer Washburn, *The Kept University*, ATLANTIC MONTHLY, Mar. 2000, *available at* http://www.theatlantic.com/issues/2000/03/press.htm (last visited Feb. 2, 2004) (reprinted in AAAS SCIENCE AND TECHNOLOGY YEARBOOK Ch. 26, at 293-318, http://www.aaas.org/spp/rd/ch26.pdf) (last visited Sept. 22, 2004).

177 *See* Public Knowledge, *Mission Statement*, *at* http://www.publicknowledge.org/about-us/mission-statement (last visited Sept. 22, 2004):

> Public Knowledge is a new public-interest advocacy organization dedicated to fortifying and defending a vibrant information commons. This Washington, D.C. based group works with wide spectrum of stakeholders—libraries, educators, scientists, artists, musicians, journalists, consumers, software programmers, civic groups and enlightened businesses—to promote the core conviction that some fundamental democratic principles and cultural values—openness, access, and the capacity to create and compete—must be given new embodiment in the digital age.

178 Public Knowledge, *Bayh-Dole Act: Introduction*, *at* http://www.publicknowledge.org/text-only/issues/bayh-dole-act.html (last visited Feb. 2, 2004).

The AAU has consistently characterized the ramifications of the Bayh-Dole Act in a positive light.[179] Second, and regardless of the merits of Bayh-Dole, the Sabo Bill does not touch on the question of patents; it is limited to the question of whether copyright will subsist in particular works. The "commercial development of university research" under Bayh-Dole, which the AAU so applauds, is about the ability of universities to claim and license patent rights in inventions. Research leading to the development of a new product, process, or therapy might well have been fixed in a tangible medium of expression in which copyright might subsist. But the question of the nature of the interest in such a work under the Copyright Act is quite separate and apart from issues of patentability under the Patent Act. Relying on Bayh-Dole to justify the commercialization of research results separate and apart from issues of patentability goes well beyond its original intention.[180]

Third, and more related to the goal of the Sabo Bill, the Bayh-Dole Act does not encourage the publication of research results. In fact, one of the unfortunate consequences of the "successful collaborations" under Bayh-Dole is that many research results are

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179 *See* AAU, *University Technology Transfer of Government-Funded Research Has Wide Public Benefits*, *at* http://www.aau.edu/research/TechTrans6.3.98.html (last visited Sept. 22, 2004) (pointing out that:

> [b]efore passage of the Bayh-Dole Act, fewer than 250 patents were issued to U.S. universities each year. Sixteen years later in 1996, universities received more than 2,000 new patents, executed nearly 2,200 licensing agreements, and received royalty income from licensing of $242 million. Since 1980, more than 1,500 start-up companies have been formed based on technologies discovered at academic institutions.).

See also AAU, *University Working Group Observations on NIH Report on Return on Investment in Drug Research, August, 2001*, *at* http://www.aau.edu/research/NIH8.20.01.html (last visited Sept. 22, 2004) ("[a]s a direct result of Bayh-Dole, academic institutions across the country have established a strong national technology-licensing infrastructure that encourages the practical application of basic research results for the broad public benefit."). According to the Association of University Technology Managers (AUTM), "technology transfer" is a term used to describe a formal transferring of new discoveries and innovations resulting from scientific research conducted at universities to the commercial sector. One way that universities transfer technology is through patenting and licensing new innovations. The major steps in this process include: 1) the disclosure of innovations; 2) patenting the innovation concurrent with publication of scientific research; and 3) licensing the rights to innovations to industry for commercial development. *See* AUTM, *at* http://www.autm.net/pubs/survey/qa.html (last visited Sept. 22, 2004).

180 *See* Jerome H. Reichman & Paul F. Uhlir, *The Public Domain: A Contractually Reconstructed Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment*, 66 LAW & CONTEMP. PROBS. 315, 370 (2003) (describing the expansionary nature of the Bayh-Dole regime:

> The original purpose of the Bayh-Dole Act and related legislation was primarily to enable universities to obtain patents on applications of research results. More recently, this activity has expanded to securing both patents and copyrights in computer programs. Now, databases used in molecular biology have themselves become sources of patentable inventions, and the potential commercial value of these databases as research tools has attracted considerable attention and controversy.).

withheld in order to preserve the element of novelty that is required for a subsequent patent application to succeed. Under the Patent Act, the requisite novelty is destroyed through prior disclosure,[181] which explains why potential patentees go to great lengths to preserve the confidentiality of research results prior to filing a patent application. Recent research suggests that, "participation in an academic-industry research relationship and engagement in the commercialization of university research were significantly associated with delays in publication."[182] Suppressing the publication of research results to preserve patentability is hardly conducive to the advancement of science or the goal of public access to the fruits of the research.[183]

It is not surprising that of all of the higher education associations, only the AAU has expressed its opposition to the bill. State colleges and universities, community colleges, and smaller independents do not receive the significant revenues from the commercialization of research activities enjoyed by the larger research-intensive institutions, and consequently, they have less of a stake in justifying the Bayh-Dole regime. In sum, the arguments raised by the AAU do not go to the gist of the policy questions presented by the Sabo Bill, and they tend to obfuscate the underlying purposes of copyright in the first instance. One is left with the distinct impression that the large research universities appear to view the

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181 *See* 35 U.S.C. § 102(b) (2000) (providing that a person shall be entitled to a patent unless "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States").

182 D. Blumenthal et al., *Withholding Research Results in Academic Life Science: Evidence from a National Survey of Faculty*, 277 JAMA 1224-28 (1997), *available at* http://jama.ama-assn.org/cgi/content/abstract/277/15/1224 (last visited Sept. 22, 2004). The study concludes:

> 410 respondents (19.8%) reported that publication of their research results had been delayed by more than 6 months at least once in the last three years to allow for patent application, to protect their scientific lead, to slow the dissemination of undesired results, to allow time to negotiate a patent, or to resolve disputes over the ownership of intellectual property. Also, 181 respondents (8.9%) reported refusing to share research results with other university scientists in the last 3 years. In multivariate analysis, participation in an academic-industry research relationship and engagement in the commercialization of university research were significantly associated with delays in publication.

Id. See also Eric G. Campbell et al., *Data Withholding in Academic Genetics Evidence From a National Survey*, 287 *JAMA* 473-480 (2002), *available at* http://jama.ama-assn.org/cgi/reprint/287/4/473.pdf (last visited Sept. 22, 2004) (concluding that "data withholding occurs in academic genetics and it affects essential scientific activities such as the ability to confirm published results. Lack of resources and issues of scientific priority may play an important role in scientists' decisions to withhold data, materials, and information from other academic geneticists.").

183 *See* Reichman & Uhlir, *supra* note 180, at 342 (arguing that "the policies promoting downstream application of university research results under Bayh-Dole have increasingly come into conflict with the policies favoring full and open access to research data and with the larger educational and public interest mission of universities.").

Sabo Bill as a threat to their overall program of commercialization, and that this consideration drives their opposition more than any supposed deleterious effect the bill would have on the production and dissemination of works derived from STM research.[184]

D. *Authors and Researchers*

The fourth group of stakeholders to consider are the authors. The interests of authors as stakeholders in copyright policy is complex because they are both owners, at least initially,[185] and users of

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184 *See* David Malakoff, *Congress Aims at Journal Copyrights*, SCIENCE NOW, June 30, 2003, *at* http://sciencenow.sciencemag.org/cgi/content/full/2003/630/3 (last visited Sept. 22, 2004).

> But denying researchers or scientific journals copyright protection would mean that "anyone could pick up [the work] and use it," says Gerald Barnett, intellectual property chief at the University of California, Santa Cruz. And university officials say that the change would dampen industry interest in certain research products—such as software and Web sites—that are currently protected by copyrights. Lita Nelson, head of technology transfer at the Massachusetts Institute of Technology, says the proposal "may be well-intentioned, but it's off the mark."

Id. But not all university officials have reacted negatively to the bill. According to a report in the MINN. DAILY (Nathan Hall, *Proposed Bill Would Make Federally Funded Science Research Results Free*, MINN. DAILY, (July 7, 2003), http://www.mndaily.com/articles/2003/07/07/6163 (last visited Sept. 22, 2004)), campus officials reacted positively to the bill. University of Minnesota Provost Christine Maziar said, "we are extremely grateful he introduced the concern because some commercial journals may be impeding the dissemination of information. Pricing subscriptions at $20,000 annually is squeezing out informational access." *Id.* David Hamilton, the University's interim Vice President for Research, said "a few European commercial journals are inflating their fees more than twelve percent per year . . . . They're pricing us out of the market and that's incredibly detrimental to research institutions like us." *Id.*

185 Section 201(a) of the Copyright Act establishes the default rule for initial copyright ownership in works: "Copyright in a work protected under this title vests initially in the author or authors of the work. The authors of a joint work are coowners of copyright in the work." In the case of works made for hire or in the course of employment, § 202(b) vests initial ownership in the employer:

> In the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title, and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright.

17 U.S.C. § 202(b). Most universities do not insist on the full scope of their statutory rights under § 202(b), and permit their academic employees to retain interests in their works; however, there are increasing pressures for this policy to change in favor of university ownership. *See* INTELLECTUAL PROPERTY AND NEW MEDIA TECHNOLOGIES: A FRAMEWORK FOR POLICY DEVELOPMENT AT AAU INSTITUTIONS (A REPORT TO THE AAU DIGITAL NETWORKS AND INTELLECTUAL PROPERTY MANAGEMENT COMMITTEE BY THE INTELLECTUAL PROPERTY TASK FORCE) 1, 5, at http://www.aau.edu/reports/IPReport.pdf (last visited Sept. 22, 2004) (suggesting that changes in information technology "require research universities to formulate or modify existing intellectual property policies that clarify for members of the university community their rights and responsibilities in developing content for the new digital media" (at 1) and that "[o]n the basis of these principles [referring to the previous section reviewing the core missions of the research university], the university should own the intellectual property that is created at the university by faculty, research staff, and scientists and with substantial aid of its facilities or its financial support" (at 5)). *See also* David Noble, *Digital Diploma Mills, Part II: The Coming Battle over Online Instruction: Confidential Agreements Between Universities and Private Companies Pose Serious Challenge to Faculty Intellectual*

copyrighted works. This dual capacity creates a dilemma for authors in terms of their positions on copyright policy matters. While authors certainly have an interest in protecting their works from appropriation and distortion, they are also reliant on a vibrant public domain in order to be able to carry on their activities. This reliance is especially true in the area of scientific research, which is a cumulative effort heavily dependent on access to previous works. As the NIH notes,

> The nature of scientific enterprise is both historical and collegial, not momentary or isolated. It is historical because it builds, sometimes slowly, on previous work and on a continuum of knowledge and information. It is collegial because scientific inquiry today is complex and requires collaboration among researchers from many disciplines.[186]

In assessing the impact of the Sabo Bill on the interests of authors, it is necessary to focus on the motivations of grant recipients, the nature of the works they produce, and the economic realities of the publication process.

Professor Jerome Reichman, a law professor at the Duke University School of Law, is quoted in a recent article in *The Scientist* as saying that the bill is a "well intentioned but perhaps overly simple solution to a very complex problem."[187] "Perhaps the biggest danger posed by the bill," said Reichman, "is that scientists' control over their published works may be eroded further than it already is under the current scientific publishing model."[188] Reichman's concerns may be contrasted with the previous comments; he is addressing the question from the point of view of the author. While the previous commentators seem primarily concerned with the bill's effect on publishers and the question of distribution models, Reichman is thinking about its effect on authors.

Unfortunately, the article does not expand on Reichman's concerns about loss of control. It is clear that without an enforcea-

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Property Rights (March 1998), *at* http://www.communication.ucsd.edu/dl/ddm2.html (last visited Sept. 22, 2004) (finding that

> [t]raditionally, universities have acknowledged that faculty, as the authors of courses, have owned their course materials and hence copyright to them . . . but the universities are now undertaking to usurp such traditional faculty rights in order to capitalize on the online instruction marketplace, and it is for this reason that the rather arcane matter of copyright and intellectual property has become the most explosive campus issue of the day. Here the battle line over the future of higher education will be drawn.).

186 NIH, *Setting Research Priorities at the National Institutes of Health (How Science Works), at* http://www.nih.gov/about/researchpriorities.htm (last visited Sept. 22, 2004).

187 Zandonella, *supra* note 138.

188 *Id.*

ble copyright interest, the author will indeed lose some degree of control over the subsequent dissemination of the work. But under the current system of scientific publishing, how much control does an author really have? As a practical matter, if authors wish to have their works published, they must assign their copyright to a publisher. In many cases, especially with the commercial publishers who have come to control a large segment of the scientific publishing journals, authors must assign away all of their rights in their works. As to rights of attribution and integrity, these interests are not directly relevant under the United States Copyright Act because it does not recognize moral rights.[189] In moral rights jurisdictions, the author retains attribution, integrity, and associational rights separate and apart from the economic interest in copyright which has been assigned.[190] The types of concerns being raised by Reichman may relate more to the potential loss of authors' moral rights than any rights existing under United States copyright law. Were the United States a jurisdiction that explicitly recognized authors' moral rights of attribution, integrity and association in their works, then the Sabo Bill would need further explanation of these rights separately from the economic rights. As these rights do not exist under the United States Copyright Act, however, Sabo's amendment to section 105 would not further erode them.

Another problem that has been raised is plagiarism. *The Scientist* article discussed above also reports that:

> Publishers say copyright ownership enables them to protect works from plagiarism. "The Sabo bill would weaken the right of scientists to be cited for their own work," said Margaret Reich, director of publications and executive editor for the American

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189 *See* Roberta Kwall, *The Attribution Right in the United States: Caught in the Crossfire Between Copyright and Section 43(A)*, 77 WASH. L. REV. 985 (2002) (arguing that adequate protection for authors' moral rights is sorely lacking in the United States, and that a broad right of attribution should be explicitly adopted).

190 In Canada, as in most European countries, authors have "moral rights" in respect of their works, separate and apart from the transferable economic copyright interest. *See* Canadian Copyright Act, R.S.C., ch. C-42, § 14.1 (1985) (Can.). The term "moral" is somewhat misleading because the rights are legally enforceable. Moral rights are rooted in the idea that an author's work is an extension of the author's persona and that parting with the economic copyright interests does not lessen the author's personal attachment to the work. Moral rights include the rights of attribution, integrity, and association. The right of attribution allows an author to remain anonymous or to be associated with the work by name or under a pseudonym where it is reasonable under the circumstances. The right of integrity may prevent works from being "distorted, mutilated or otherwise modified," if the action prejudices the author's honor or reputation. *Id.* § 28.1. The related right of association allows an author to control the use of the work in association with a product, service, cause or institution. In Canada, the associational right is also subject to the requirement that the author show prejudice to his or her honor or reputation. Moral rights may not be transferred; although, at least in Canada, they may be explicitly waived.

> Physiological Society. "My fear is that it will result in a free-for-all."[191]

The problem of plagiarism remains a pressing concern for authors, researchers, and educators, but this issue is best addressed by mechanisms other than transferable economic interests in copyright. Although the concepts are often conflated, plagiarism and copyright infringement are distinct issues. One might plagiarize without infringing copyright by representing an older work in the public domain as an original work. Or one might infringe copyright without plagiarizing by reproducing a work, with the author's credit properly intact, without the authorization of the copyright holder (who may or may not be the author). The difference is summarized succinctly in a *Plagiarism Tutorial* posted on the North Carolina State University's library website:

> Extensive quoting without permission and without attribution would be infringement and plagiarism. Similarly, extensive quoting without permission but with attribution would not be plagiarism but would still be copyright infringement. Conversely, extensive copying with permission but without attribution would be plagiarism but not copyright infringement.[192]

Given the marginality of the economic copyright interests actually retained by authors in the field of STM publication, especially when compared to their need to access other works as part of the research process, the conflict arising from their dual capacity is less serious than it may seem at first. Grant recipients are primarily motivated by their desire to make a contribution to their field, and the recognition for such contribution is the source of prestige among peers, an important determinant for career advancement and a factor influencing the ability to obtain further research grants. In the case of a published STM journal article, the measurement of value for an author is more likely the amount of times the work is cited by peers, not the revenue accruing to the publisher-assignee.[193] To the extent that copyright restrictions limit further access to a work, the likelihood of subsequent citation and

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191 Zandonella, *supra* note 138.

192 North Carolina State University, *Plagiarism Tutorial*, *at* http://www.lib.ncsu.edu/scc/tutorial/plagiarism/plag5.html (last visited Sept. 22, 2004).

193 *See* Reichman & Uhlir, *supra* note 180, at 336-37:

> Scientists are not, for the most part, motivated to do research to make money. If they were, they would be in different fields. The primary motivation for most research scientists is the desire for influence and impact on the thinking of others about the natural world - unless the desire for their own personal understanding is even stronger . . . . The currency of the researcher is the extent to which her or his ideas influence the thinking of others . . . . What this implies is

usage decreases to the detriment of the author. Unlike a tangible good, which is depleted upon consumption, the value of research results actually grows as they are cited and used by others.

Sociologist Robert Merton reminds us that the reward system of science is primarily based on peer recognition, and all other extrinsic rewards flow from this recognition.[194] Merton characterizes the role of property in the scientific process as paradoxical because the more scientists make their intellectual property freely available to others, the more securely it becomes identified as their property. The sociologist notes:

> [f]or science is public not private knowledge. Only by publishing their work can scientists make their contribution (as the telling word has it) and only when it thus becomes part of the public domain of science can they truly lay claim to it as theirs. For that claim resides only in the recognition of the source of the contribution by peers. The greatest ambition of a productive scientist is to do the kind of work that will be much used and much esteemed by fellow scientists best qualified to assess its worth. And, in general, scientific work is esteemed in the measure that others can draw upon it to advance their own future inquiry.[195]

The importance of using the existing tools of knowledge as a building block to subsequent knowledge creation is foundational to Karl Mannheim's "sociology of knowledge":

> Strictly speaking it is incorrect to say that the single individual thinks. Rather it is more correct to insist that he participates in thinking further what other men have thought before him. He finds himself in an inherited situation with patterns of thought which are appropriate to this situation and attempts to elaborate further the inherited modes of response or to substitute others for them in order to deal more adequately with the new challenges which have arisen out of the shifts and changes in the situation. Every individual is therefore in a two-fold sense predetermined by the fact of growing up in a society: on the one hand he finds a ready-made situation and on the other he finds in that situation preformed patterns of thought and of conduct.[196]

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that the distribution of the results of research has an extremely high priority for any working scientists, apart from those whose work is behind proprietary walls. (emphasis omitted).

194 Robert K. Merton, *Foreword* to EUGENE GARFIELD, CITATION INDEXING – ITS THEORY AND APPLICATION IN SCIENCE, TECHNOLOGY, AND HUMANITIES viii (1979), *available at* http://www.garfield.library.upenn.edu/cifwd.html (last visited Sept. 22, 2004).

195 *Id.*

196 Karl Mannheim, Ideology and Utopia 3 (1936).

By enhancing the scope of the public domain, the Sabo Bill would benefit authors/researchers and promote the progress of science because it is consistent with these values that Merton identifies as central to the scientific enterprise.

E. *The Library Associations*

The fifth set of stakeholders is the library community, as represented through its professional associations.[197] In recent years, these associations have been at the forefront of articulating the public interest in copyright policies, and their advocacy work is based on the philosophy of broad public access to information resources as a necessary foundation for a democratic society. The public, the sixth and perhaps most significant stakeholder, has been able to rely consistently on the library associations to articulate the public interest in copyright matters and other information policies. Thus far, the response to the Sabo Bill from the library community has been limited. The American Association of Law Libraries (AALL) supports the bill, and the Association of Research Libraries (ARL) has issued a statement generally supportive of PLoS' efforts. The American Library Association (ALA) has listed the bill on its *2003 Copyright Agenda,*[198] but has not otherwise issued any public statements on the matter. The Medical Library Association has opposed the bill.

The Sabo Bill has been explicitly endorsed by AALL, which drew an analogy between access to legal information and access to research results:

> Over the years, AALL has worked consistently towards broader public access to legal and government information. While the *Public Access to Science Act* does not directly involve legal materials, we share your interest in public access to federally funded research, including scientific, technical, and medical information. In particular, we believe that resources that have been generated at taxpayer expense should be available to the public without undue copyright restrictions acting as a barrier to access. Accordingly, we support H.R. 2613 and appreciate your

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197 American Library Association (ALA) (http://www.ala.org), American Association of Law Libraries (AALL) (http://www.aallnet.org), Association of Research Libraries (ARL) (http://www.arl.org), Medical Libraries Association (http://www.mlanet.org), and Special Libraries Association (http://www.sla.org) (all sites last visited Sept. 22, 2004).

198 *See* ALA Office of Government Relations, *2003 Copyright Agenda, available at* http://www.ala.org/Content/NavigationMenu/Our_Association/Offices/ALA_Washington/Issues2/Copyright1/CopyrightAgenda0803.pdf (last visited Feb. 2, 2004) ("ALA supports efforts to amend the DMCA and to urge the courts to restore the balance in copyright law and ensure fair use.").

> effort to bring this issue to the attention of Congress and the public.[199]

ARL issued a joint statement with the Scholarly Publishing and Academic Resources Coalition (SPARC) on August 6, 2003, which was generally supportive of PLoS and the goals of the Sabo Bill.[200] The statement supports the "goal of timely, sustained, and reliable open access to federally funded research" and encourages "broad discussion on the most effective strategies to achieve this goal."[201]

ARL and SPARC explain their use of the term "open access:"

> By open access we mean no-fee access on the public internet to works and data that are currently given away to publishers by researchers and scholars with no expectation of financial payment. Open access is an effective means to ensure broad distribution and use of information that is fundamental to the health and welfare of our society. Both ARL and SPARC expressed their commitment to open access by signing on to the Budapest Open Access Initiative in February 2002. ARL's strategic plan for its copyright and scholarly communication programs identifies open access as a priority goal.[202]

After favorably reviewing PLoS' arguments for open access to scientific research, the statement addresses the Sabo Bill itself:

> For all of these reasons, ARL and SPARC support the principle of open access to federally funded research. A variety of strategies have been proposed to achieve this goal, including the recent introduction of legislation by Congressman Martin Sabo (D-MN) to place articles reporting on federally funded research into the public domain (H.R. 2613, the Public Access to Science Act of 2003). ARL and SPARC welcome the platform this legislation has provided for public discussion of these important issues.[203]

But while this statement indicates general support for the goals of the bill, it stops short of explicitly endorsing the measure as such. ARL and SPARC end by acknowledging the presence of concerns among other stakeholders about the bill:

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199 American Association of Law Libraries, Washington Affairs, *at* http://www.ll.georgetown.edu/aallwash/lt081820031.html (last visited Sept. 22, 2004). By way of full disclosure, the author is a member of the AALL Copyright Committee and actively participated in the discussion leading up to the support of the Sabo Bill.

200 *ARL and SPARC Support Open Access to Federally Funded Research* (Aug. 6, 2003), *at* http://www.arl.org/arl/pr/open_access_support.html (last visited Sept. 22, 2004).

201 *Id.*

202 *Id.*

203 *Id.*

> ARL and SPARC recognize that universities, scientists, societies, publishers, librarians, and authors have legitimate concerns that must be reconciled if the most effective means to achieve open access are to be found. ARL and SPARC encourage broad discussion among stakeholders and will seek to facilitate such conversations.[204]

The Medical Library Association sent a letter to Rep. Sabo[205] supporting the bill's intent but expressing concerns about the actual means used to achieve its purpose.[206]

Thus, there seems to be a stronger consensus about the Sabo Bill's ends than there is about its means.[207] For while eliminating copyright in federally funded research works *ab initio* is the most direct route towards public access to these works, it also strikes a nerve with some authors and non-profit publishers. This dissonance, however, is unnecessary.

The Sabo Bill is a moderate measure that simply tries to adjust copyright policy to better realize copyright's ultimate goal of promoting the progress of science. The following section identifies alternative approaches to accomplishing the bill's underlying purposes, and assesses whether these alternatives raise additional problems or barriers to implementation. It then suggests how the Sabo Bill might be improved in light of these alternatives.

IV. Alternative Approaches to the Problem of Open Access

The first alternative approach is based on the *Bethesda Principles*, a general statement of principle drafted in April 2003.[208]

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204 *Id.*

205 Letter from the Medical Library Association to Rep. Martin Olav Sabo (D-Minn.) (July 30, 2003), *at* http://www.mlanet.org/government/info_access/mla_letter_sabo.html (last visited Sept. 22, 2004).

206 The letter states in part:

> MLA applauds you for addressing this timely issue and strongly supports what we understand to be the intent of the bill-that information generated from federally funded scientific research should be easily accessible to every person in the United States. . . . However, we are concerned that the legislation could also have the unintended consequence of overturning current copyright law that was put in place to protect an author's works. While excluding federally funded research from copyright protection might facilitate more open access to research findings, it also has the potential to interfere with technology transfer activities that support the development of new products and therapies used to treat and cure disease in patients. The Bayh-Dole Act of 1980 gives universities responsibility for protecting and commercializing the scientific discoveries made with federal funds. This act has encouraged many successful collaborations among the academic community, government, and industry that have benefited society.

Id.

207 At least in the education and non-commercial publishing communities.

208 *See* Open Access Now, Summary of the April 11, 2003 Meeting on Open Access

Under this approach, an author would retain a copyright in the work. This copyright, however, would be subject to two requirements:

> 1. The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.
> 2. A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving . . . .[209]

PUBLISHING, *at* http://www.biomedcentral.com/openaccess/bethesda (last visited Sept. 22, 2004). The principles were adopted by consensus at the Open Access Publishing Conference held at the Howard Hughes Medical Institute in Chevy Chase, Maryland on April 11, 2003. The purposes of the conference and the resulting document were

> to stimulate discussion within the biomedical research community on how to proceed, as rapidly as possible, to the widely held goal of providing open access to the primary scientific literature . . . [and] to agree on significant, concrete steps that all relevant parties — the organizations that foster and support scientific research, the scientists that generate the research results, the publishers who facilitate the peer-review and distribution of results of the research, and the scientists, librarians and other who depend on access to this knowledge — can take to promote the rapid and efficient transition to open access publishing.

Id. A list of the participants is included with the full text of the principles at http://www.biomedcentral.com/openaccess/bethesda (last visited Sept. 22, 2004) and at http://www.earlham.edu/~peters/fos/bethesda.htm (last visited Sept. 22, 2004). The conference participants were primarily engaged in the field of biomedical sciences, but the general principles are applicable across a wide range of disciplines.

209 *See* OPEN ACCESS NOW, *supra* note 208. The second requirement introduces the term "online repository." Clifford Lynch provides a definition of a "university-based institutional repository" that may be generalizable to the other institutions as well:

> [A] university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution. While operational responsibility for these services may reasonably be situated in different organizational units at different universities, an effective institutional repository of necessity represents a collaboration among librarians, information technologists, archives and records mangers, faculty, and university administrators and policymakers. At any given point in time, an institutional repository will be supported by a set of information technologies, but a key part of the services that comprise an institutional repository is the management of technological changes, and the migration of digital content from one set of technologies to the next as part of the

If a work meets these two requirements, it is deemed an "Open Access Publication."

A second approach is based on the principles of the *Budapest Open Access Initiative*,[210] developed at a December 2001 conference held by the Open Society Institute (OSI).[211] Achieving the purposes of the *Budapest Initiative* is based on a two-prong strategy of self-archiving[212] and open access journals.[213] While the *Budapest In-*

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organizational commitment to providing repository services. An institutional repository is not simply a fixed set of software and hardware.

Clifford Lynch, *Institutional Repositories: Essential Infrastructure for Scholarship in the Digital Age*, *in* ARL BIMONTHLY REPORT 226 (February 2003), *available at* http://www.arl.org/newsltr/226/ir.html (last visited Sept. 22, 2004). *See also* Reichman & Uhlir, *supra* note 180, at 427 (arguing for the mandatory deposit of research data into repositories:

> the government funding agencies should encourage unconditional deposits of research data, to the fullest extent possible, into both centralized repositories and decentralized network structures. The obvious principle here is that, because the data in question are government-funded, improved methods should be devised for capturing the social benefits of public funding, lest commercial temptations produce a kind of de facto free-riding at the taxpayers' expense.).

While Reichman & Uhlir refer to deposits of data, the same policy considerations apply to works reporting on research results.

210 OPEN SOCIETY INSTITUTE, BUDAPEST OPEN ACCESS INITIATIVE, *at* http://www.soros.org/openaccess/index.shtml (last visited Sept. 22, 2004).

211 *See Open Society Institute* (OSI), *at* http://www.soros.org (last visited Sept. 22, 2004).

> Open Society Institute's initiatives address specific issue areas on a regional or network-wide basis around the world. Most of the initiatives are administered by OSI in New York or OSI–Budapest and implemented in cooperation with Soros foundations in various countries. The nearly 20 OSI initiatives cover a range of activities aimed at building free and open societies, including the strengthening of civil society; economic reform; education at all levels; human rights; legal reform and public administration; media and communications; public health; and arts and culture.

Id. The purpose of the meeting adopting the Budapest Open Access Initiative was "to accelerate progress in the international effort to make research articles in all academic fields freely available on the internet . . . [and to explore] the most effective and affordable strategies for serving the interests of research, researchers, and the institutions and societies that support research." *Id.* (last visited Sept. 22, 2004).

212 *See* OPEN SOCIETY INSTITUTE, BUDAPEST OPEN ACCESS INITIATIVE, *at* http://www.soros.org/openaccess/read.shtml (last visited Sept. 22, 2004) (noting:

> [S]cholars need the tools and assistance to deposit their refereed journal articles in open electronic archives, a practice commonly called, self-archiving. When these archives conform to standards created by the Open Archives Initiative, then search engines and other tools can treat the separate archives as one. Users then need not know which archives exist or where they are located in order to find and make use of their contents.).

See also Stevan Harnad, *The Self-Archiving Initiative: Freeing the Refereed Research Literature Online*, 410 NATURE 1024 (2001), *available at* http://www.ecs.soton.ac.uk/~harnad/Tp/naturenew.htm (last visited Sept. 22, 2004).

213 *See* OPEN SOCIETY INSTITUTE, *supra* note 212 (noting:

> [S]cholars need the means to launch a new generation of journals committed to open access, and to help existing journals that elect to make the transition to open access. Because journal articles should be disseminated as widely as possible, these new journals will no longer invoke copyright to restrict access to and use of the material they publish. Instead they will use copyright and other tools to ensure permanent open access to all the articles they publish. Because price is a barrier to access, these new journals will not charge subscription or access fees, and will turn to other methods for covering their expenses. There are

itiative does not offer precise contractual language, it provides a definition of "open access":

> By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and *the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.*[214]

Thus, the *Budapest Initiative* does not anticipate transferable economic rights in copyright; rather, an author's copyright interest would be limited to the author's moral rights of attribution and integrity.[215] Since these moral rights do not exist under United States copyright law, the *Budapest Initiative* seems to be closer to the Sabo Bill than the *Bethesda Principles*, which does admit some limited economic rights in copyright. In a moral rights jurisdiction, the implementation of the *Bethesda Principles* would require more specific language clearly demarcating the difference between the treatment of moral and economic rights; however, this problem does not arise in the United States at this time.

A third approach would be for the government to retain certain incidents of ownership in the work that would be exercised on the public's behalf under a legislative reserved right. The reservation of copyright interests by the government is already provided for in OMB Circular A-110[216] and various Federal Regulations,[217] but as the earlier discussion indicated, the right has not been effective because it is not enforced and is routinely violated by publishers.[218] A legislative alternative based on this approach would need

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many alternative sources of funds for this purpose, including the foundations and governments that fund research, the universities and laboratories that employ researchers, endowments set up by discipline or institution, friends of the cause of open access, profits from the sale of add-ons to the basic texts, funds freed up by the demise or cancellation of journals charging traditional subscription or access fees, or even contributions from the researchers themselves. There is no need to favor one of these solutions over the others for all disciplines or nations, and no need to stop looking for other, creative alternatives.).

214 *Id.* (emphasis added).

215 *See supra* notes 189-90.

216 *See supra* notes 49-50 and accompanying text.

217 *See supra* notes 51-77 and accompanying text.

218 *See supra* note 78 and accompanying text.

to specify adequate enforcement measures so the interest does not become illusory, as is the case under current practice.

Such a measure could, for example, specify that any attempt to transfer exclusive rights in derogation of the reserved interest is void. The measure would also need to mandate that certain steps be taken under the reserved right in order to provide permanent public access to the works. This goal could be accomplished by an automatic transfer of the government's interest to a bona fide non-profit institutional depository engaging in open access modes of distribution, and such a transfer and subsequent dissemination would be deemed to be a government purpose. In this case, there would be co-ownership of the copyright interest between the author and the government, wherein the author co-owner would have full rights to utilize the work, but full transferability to third parties would be restricted so as to preserve the other co-owner's interest. If the government retained a non-exclusive interest in the work, then the author would be left with the right to grant only a non-exclusive license in the work. This scenario would permit the author to place the work in the journal of his choosing, but only on a non-exclusive basis; he would not be able to comply with any contractual condition that required a full assignment in the nature of an exclusive license. And while a publisher-assignee would be able to use the work in its publications, it would be unable to restrict the downstream reproduction or distribution of the work by other third parties.

While publishers would no doubt argue that this option would destroy their incentive to distribute works because of their inability to enforce exclusive copyright restrictions, if a particular journal indeed provides added value and services to its authors and users, there are still reasons why authors would publish in and subscribers would purchase the journal. The practical implications of the third scenario are similar to the first, but there is a significant distinction in the ownership structure of the work. Given the poor track record of the government in enforcing the interests it already owns, it is unlikely that this alternative would be viable unless it was bolstered by both strong enforcement mechanisms and broad dissemination mandates.

A fourth approach would allow authors to retain copyright, but prohibit them from assigning exclusive licenses or otherwise transferring their full interest in the copyright to a publisher. This variant was recommended by a group of authors in 1998 working under the auspices of the American Academy of Arts and Sciences:

> Federal agencies that fund research should recommend (or even require) as a condition of funding that the copyrights of articles or other works describing research that has been supported by those agencies remain with the author. The author, in turn, can give prospective publishers a wide-ranging nonexclusive license to use the work in a value-added publication, either in traditional or electronic form.[219]

Under this approach, the author retains the copyrights of authorizing further reproduction and distribution of the work. Proponents of this approach add that the license between the author and publisher "would have to be carefully drawn to allow publishers to include the works in their own collections . . . [and] a publisher may request or require as a condition of publication that the author cite the formal publication reference in all further postings of the manuscript."[220]

A fifth, more limited approach, would be to allow the author full copyright ownership rights, but for a limited term much less than the current default rule of life of the author plus seventy years.[221] This approach could be coupled with the online deposit requirement contained in the *Bethesda Principles.*

Under any of these options, the agency contract could require the author to deposit the work in an electronic open archive, with the proviso that the archive may distribute the work either immediately or only after the passage of a certain amount of time. Except for the second approach, all of these approaches stop short of denying transferable economic copyright interests in the entire work, but place restrictions on the nature, scope, or duration of the subsisting copyright. However, there are thorny problems involved with legislating these limitations for a subsisting copyright arising from the operation of various international treaties and agreements.

The first problem is the obligation under the Berne Convention[222] and TRIPS Agreement[223] to provide a minimum term of

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219 Steven Bachrach et al., *Intellectual Property: Who Should Own Scientific Papers?*, 281 SCIENCE 1459, 1459-60 (1998). This article summarizes a study sponsored by the Midwest Center of the American Academy of Arts and Sciences, which is more fully reported in AMERICAN ACADEMY OF ARTS AND SCIENCES, THE TRANSITION FROM PAPER: WHERE ARE WE GOING AND HOW WILL WE GET THERE? (R. Stephen Berry & Anne S. Moffat eds., 2001), *at* http://www.amacad.org/publications/trans.htm (last visited Sept. 22, 2004).

220 Bachrach, *supra* note 219.

221 17 U.S.C. § 302 (2000).

222 Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, 25 U.S.T. 1341, 828 U.N.T.S. 221.

223 *Agreement on Trade-Related Aspects of Intellectual Property Rights*, Annex IC, 33 I.L.M. 1197 (1994), *available at* http://www.wto.org/english/docs_e/legal_e/27-trips.pdf (last visited Sept. 22, 2004). Article 9(1) of the TRIPS Agreement incorporates by reference the

protection. Article 7(1) of the Berne Convention provides that "the term of protection granted by this Convention shall be the life of the author and fifty years after his death." Any government-imposed contractual requirement that exclusive rights should subsist for a period less than the baseline term might be attacked as inconsistent with these international obligations. The second problem is the limitation on requirements of registration or formalities. Article 5(2) of the Berne Convention provides that "[t]he enjoyment and the exercise of these rights shall not be subject to any formality." Any provision requiring the deposit of a work with a repository as a condition for copyright to subsist could be vulnerable to attack on this ground.

The third problem stemming from international agreements is the limitation on exceptions to exclusive rights contained in Article 13 of the TRIPS Agreement. Article 13 requires member states to confine limitations or exceptions to exclusive rights to certain special cases which do not conflict with normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the right holder. Since the alternative mechanisms create a subsisting copyright, any exceptions or limitations placed on this right could be susceptible to scrutiny under Article 13. However, Article 13 would not be an insurmountable barrier, as a strong argument could be made that the three-part test would be satisfied.

First, the measure could be characterized as a "special case" because the element of public funding creates a discrete and discernible category of works separate and distinct from other works. Second, the measure arguably would not interfere with the normal exploitation of the work because the exclusion from copyright is only being applied in a prospective manner. There is no interference with normal exploitation of the work because no subsisting copyright interest is affected, and all potential rights holders would receive advance notice about the limitations on their rights on account of the terms in the agency contract and in the statute. The third prong of Article 13 is the most problematic because it is so open-ended. What exactly are the "legitimate" interests of the rights holder? Undoubtedly the commercial publishers would argue that any of the alternative measures discussed above would hamper their legitimate interests.

In summary, while there are other options besides denying the subsistence of copyright in the first instance, they all raise addi-

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provisions of the Berne Convention pertaining to term duration and limitations on formalities.

tional administrative hurdles and legal challenges. One of the benefits of the Sabo Bill, as written, is that many of the problems of term, formalities, and exceptions are avoided because there is no copyright interest in the first place. While the expansion of section 105 to include works resulting from federally funded research could still conceivably give rise to a TRIPS challenge, the dynamic of such a challenge would be very different than if a copyright was first recognized and then limited. The Sabo Bill does not create a new exception or limitation on any subsisting copyright, but rather, alters the definition of what constitutes a government work excluded from copyright in the first instance.

Consideration should also be given to whether there are any weaknesses in the bill that could be addressed within its basic framework. One major concern is that the bill does not provide concrete support for the alternative models of scholarly publishing it seeks to promote. For example, Ann Okerson, Associate University Librarian at Yale University, remarked: "What Sabo misses is any discussion of just how to develop the business models that would make research available for free."[224] Other than the "sense of the Congress" clause contained in section 4 of the bill,[225] it does not substantively address the serious questions of how an alternative infrastructure for scholarly communication might be designed, operated, or funded to best deliver public domain research results to the public. The bill could be a stronger piece of legislation if these concerns were addressed.

Another problem stems from the fact that congressional action in the area of copyright is limited by the concept of territoriality. The bill's intent could be frustrated if an author/grantee assigns a copyright to an offshore publisher. Under the terms of national treatment,[226] a copyright could subsist in the work under the laws of the foreign jurisdiction notwithstanding the terms of the Sabo Bill. As the bill is currently written, nothing would prevent a federally subsidized author/grantee from transferring a copyright interest under the laws of the foreign jurisdiction, which presumably does not contain a measure similar to the Sabo Bill. To preclude this end run around the measure, the bill should in-

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224 Zandonella, *supra* note 138.

225 *See supra* note 129.

226 Section 5(1) of the Berne Convention provides:

> Authors shall enjoy, in respect of works for which they are protected under this Convention, in countries of the Union other than the country of origin, the rights which their respective laws do now or may hereafter grant to their nationals, as well as the rights specially granted by this Convention.

Supra note 222.

clude language that requires a waiver of the right of the grantee and his assignees to obtain foreign copyright protection for the work.[227]

Another concern involves the application of section 1201 of the Copyright Act to those works which, by virtue of the Sabo Bill, would no longer be subject to copyright restrictions. The anti-circumvention provisions of the DMCA apply broadly to works protected by technological measures, regardless of whether they are in the public domain, would otherwise be available through fair use, or contain non-copyrightable elements such as data.[228] As such, even if a copyright does not subsist in a particular work, access to that work may still be limited by the use of a technological protection measure. In order to fully effectuate the purposes of the Sabo Bill, or any of the aforementioned alternatives, section 1201 of the Copyright Act would need to be amended to limit its broad reach. While the Sabo Bill could include language to address this concern, it would be better for Congress to revise section 1201 directly to address the problem with respect to all works. There are two bills pending in the 108th Congress (H.R. 107, the Digital Media Consumers' Rights Act of 2003,[229] and H.R. 1066, the Benefit Authors without Limiting Advancement or Net Consumer Expecta-

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227 For example, a subsection could be added to the bill stating:

> PROVISION IN FUNDING AGREEMENTS- WAIVER OF RIGHT TO SEEK FOREIGN COPYRIGHT PROTECTION. Any Federal department or agency that enters into a funding agreement with any person for the performance of scientific research substantially funded by the Federal Government shall include in the agreement a provision that states that the grantee and their assigns waive the right to seek copyright protection under the laws of any foreign jurisdiction for any work produced pursuant to such research under the agreement. The grantee acknowledges that the receipt of federal funding under the terms of the funding agreement constitutes a good and sufficient consideration for said waiver.

This provision does not purport to give an extraterritorial effect to United States Copyright law; it is merely a contractual waiver given for good consideration.

228 *See* 17 U.S.C. § 1201(a)(1)(A) (2000) ("No person shall circumvent a technological measure that effectively controls access to a work protected under this title."). If a technological protection measure controls access to a collection that contains works protected by the Copyright Act as well as some works that are not so protected, then limitation of §1201(a)(1)(A) still applies. In addition, § 1201(a)(2) and (b)(1) prohibit a broad range of devices that could be used to circumvent access and copy controls, respectively.

229 H.R. 107, 108th Cong. (2003). Introduced by Rep. Rick Boucher (R-VA) on January 7, 2003, the DMCRA contains three provisions that would amend the current anti-circumvention rules. The first change expressly exempts from its prohibitions any persons acting solely in furtherance of scientific research into technological protection measures. The second change specifies "it is not a violation of this section to circumvent a technological measure in connection with access to, or the use of, a work if such circumvention does not result in an infringement of the copyright in the work." This section would directly address the problem of access controls limiting access to public domain materials. The third change adds language expressly providing that "it shall not be a violation of this title to manufacture, distribute, or make noninfringing use of a hardware or software product capable of enabling significant noninfringing use of a copyrighted work." *Id.*

tions Act[230]) that would limit the reach of the DMCA's anti-circumvention provisions in ways that would address the problem.

Since its introduction in June 2003, little action has been taken on the Sabo Bill. It was referred to the House Judiciary Committee on June 26, 2003 and then to the Subcommittee on Courts, the Internet, and Intellectual Property on September 4, 2003.[231] With the 108th Congress now in its second session, there is little hope that the bill will move in these committees, and as of February 1, 2004, no hearings have been scheduled. The proponents of the Sabo Bill should consider trying to have another, more sympathetic committee take jurisdiction over the matter.

CONCLUSION

Sabo's Public Access to Science Act is an important attempt to place the unresolved yet increasingly pressing issue of public access to federally subsidized works on the national policy agenda. In assessing the impact of the Sabo Bill on copyright policy, it is best to focus on two related questions: 1) will the bill promote the progress of science and 2) how will the bill affect the incentive structure for the production of scholarly works? In the case of federally funded research works, an incentive has been provided to the author in advance, in the form of the research grant itself. To provide such works the same copyright protections that apply to works made without this grant constitutes a double subsidy. On the other hand, the limitations on open public access that result from copyrights being held by private publishers are an unreasonable loss to expect the public to continue to bear. In the final analysis, the question of whether section 105 should be expanded to include the results of publicly funded research goes back to the traditional trade-off between the need to provide the appropriate level of incentives, and the need to restrict public access as little as possible in doing so. In the case of publicly funded research, the losses resulting from limiting access would outweigh the need to provide

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230 H.R. 1066, 108th Cong. (2003). The Benefit Authors without Limiting Advancement or Net Consumer Expectations Act (BALANCE Act) was introduced by Rep. Zoe Lofgren (D-CA) on March 4, 2003. The measure contains explicit findings that the scope of the anti-circumvention rules of the DMCA needs to be reconsidered. The bill would permit circumvention of copyright encryption technology if necessary to enable a noninfringing use and if the copyright owner fails to make publicly available the necessary means for circumvention. This would be done without additional cost or burden to a person who has lawfully obtained a copy of a work, or lawfully received a transmission of it.

231 Legislative information on the bill can be searched through the U.S. Library of Congress, at http://thomas.loc.gov (last visited Sept. 22, 2004).

additional incentives, above and beyond public funding, to create the work.

In conclusion, works resulting from extramural research that has been substantially subsidized by the federal government should enter the public domain in the same manner as works resulting from intramural government research undertaken by federal employees. The Sabo Bill provides a straightforward mechanism for assuring that this result is reached, thereby promoting the progress of science, which is, after all, the reason why we have copyright laws in the first place.