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Ms. Mabel E. Echols
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RE: RIN # 1894-AA07 - Department of Education Proposed Rule on a Open Licensing Requirement for Direct Grant Programs

Thank you for the opportunity to engage in this listening session in the course of your review of the Department of Education's cost-benefit analysis of this very important proposed rule. The record readily demonstrates that the public benefits of this rule would far outweigh the costs. We make this submission based on our experience and expertise concerning open licensing and the provision of access to federally-funded information resources. Because we do not have access to the agency's cost-benefit analysis, this submission is based on the record and emphasizes and clarifies three main points:

(1) The agency could have, and should have, discounted to 0 the alleged costs of the rule as in conflict with the Bayh-Dole Act's encouragement of commercialization of university research. This assertion is based on a fundamental misunderstanding and mischaracterization of the relationship between the management of copyright - which the rule does affect - and the management of patents - which the rule does not affect - that arise from federally-funded research in universities.

(2) The agency similarly could have, and should have, discounted the alleged costs of the rule concerning incentives to commercialize copyrightable information that is only partially funded by direct competitive grants from the agency for small businesses or otherwise. Any follow-on or additional private investments that add value to the results of federally-funded outputs will receive independent copyrights that will not be covered by the proposed rule's open licensing requirement. These new copyrights will give the commercializing party the market leverage necessary to profit from such investments.

(3) Experience from other initiatives that have provided access or reuse to federally-funded educational and other resources confirms that the agency's rationale for the proposed rule correctly identifies many of the public benefits that will flow from permitting productive public reuse of resources created or developed with federal funds.

I. The proposed rule is entirely consistent with Bayh-Dole Act and poses no obstacle to the commercialization of patentable inventions arising from the agency's direct, competitive grants

In the record, some comments allege that the proposed rule is inconsistent with the Patent and Trademark Law Amendments Act (Pub. L. 96-517, Dec. 12, 1980), more commonly known as the Bayh-Dole Act. Specifically, it was suggested that the proposed Open Licensing Requirement may be inconsistent with the legal requirements of the Bayh-Dole Act, especially in the case of computer software source code, which may be patented as well as copyrighted.

The comments of Professors Carroll and Contreras explain why these alleged costs of the rule are without basis in fact or law. Simply put, if software or some other product of a direct competitive grant is eligible for both copyright and patent protection, the *copyright* will be openly licensed, but the *patent* will be fully in force, and nothing in the open copyright license will give any member of the public the right to practice the patented invention without the patent holder's consent.

This distinction is important from a practical perspective because the term of copyright (the life of the author plus 70 years) is significantly longer than the term of patent protection (20 years from the date of filing the application). In the rare cases in which copyright and patent protection overlap, the grantee will retain full exclusivity for the term of its patent(s) and then the public will be free to exercise the rights granted under the open license thereafter.

This alleged conflict is legally incoherent for other reasons as well. Copyright protects the expressive content of computer source code. Patents, on the other hand, protect inventive ideas which can typically be implemented in a large number of code variants reflecting different programming languages, system architectures and logical approaches. Actual computer code rarely if ever appears in patents. The value of a patent lies not in its coverage of a specific computer program, but in the inventive concept that it embodies. Thus, two programs that are utterly dissimilar from a copyright standpoint may infringe the same patent. Requiring open licensing of a copyrighted program does not diminish the value of a patent claiming the same software. On the contrary, the release of software under open copyright licensing terms, a practice well-known in the industry, has little effect on the patent rights with which the Act is concerned.

To the extent the allegation is that the Open Licensing Requirement will impair an institution's ability to pursue patent protection, this allegation is based on a misunderstanding about copyright and a misreading of the proposed rule. Nothing in the proposed rule requires a grantee to publicly disclose a patentable invention prior to the grantee's filing a patent application. Copyright governs use of information, not access to it. While it clearly the goal of the proposed rule to make openly licensed resources publicly accessible, the timing and the terms of that access is an implementation question outside the scope of this rule.

II. The scope of the proposed rule is limited to content directly funded by the federal government, other commercialization opportunities remain intact

The proposed rule's Open Licensing Requirement covers only the copyrightable materials funded by the federal government through direct competitive grant programs. Any materials produced before the grant,

during the grant period with non-federal funding, and improved or revised after the grant period are not required to be openly licensed.

Under US copyright law, revisions of copyrighted material are subject to separate copyrights. This protects the ability of grantees to maintain exclusive copyright protection in all materials they create, except for those materials that are created with federal funds. So the only restriction on commercial exploitation is for materials funded by the federal government, and in that case, grantees are free to commercialize and sell those materials, but they must also be released to the public to use and build upon.

Example: A grantee brings an existing educational resource, such as a textbook, to a project and creates a study guide or teacher training manual in the course of the grant.
Pre-existing materials: The grantee's pre-existing material remains subject to all-rights-reserved copyright. The teacher training material and study guide created in the course of the grant would be openly licensed and available for use and modification by the public. The public would still have to obtain a license from the grantee to use the pre-existing textbook or resource.
Commercialization of the Openly Licensed Materials: The Open License Requirement makes the federally funded materials the platform for investment and competition. Both the grantee and others are free to sell the openly licensed training materials that they produced during the grant, and may choose to do so if they can offer them with commercially competitive features. The grantee remains the only entity that can sell or license the pre-existing materials they brought to the grant.

Assuming that the private commercialization of federally-funded resources is of public benefit in some instances, the Open Licensing Requirement fosters such commercialization. To obtain market leverage, a grantee, or a competitor, need only improve the resource with copyrightable expression that the market values because the improved version of the resource will outcompete the openly-licensed version.

III. The agency properly identified the substantial public benefits that the proposed rule will produce

The easiest way to understand or model the benefits of the rule is through the economics of opportunity cost. Under current conditions, federal funds produce an all-rights-reserved copyright owned by the grantee for the full duration of copyright protection. The opportunity cost of the status quo is measured by all of the productive reuses by all of the potential users in the public that are foregone because of the grantee's full control over uses governed by copyright.

The agency correctly decided that the public would benefit by reducing or eliminating this opportunity cost through the proposed rule's Open Licensing Requirement, which would unleash all of this productive reuse. And, because of the length of copyright protection, this benefit is compounded by generations of reuse that can follow.

Points I and II above explain why the opportunity cost of the proposed rule is quite minimal because the grantee retains the ability to commercialize through patent protection or through value-added investments. Fundamentally, the opportunity cost here is only the ability of the grantee to benefit by by selling duplicative materials - such as training materials - to multiple agency programs or by exercising the exclusive rights of copyright to profit from selling information that was developed with public funds without adding further

value. The agency correctly concluded that this alleged "cost" is no cost at all, as the public accrues no benefits from these forms of double dipping.

A. Open licensing has been commercially successful in the software industry

While concern has been raised by the impact that the proposed rule would have on software products produced under this rule, in fact the open source software industry has fostered the development of widely used, commercially adopted software products, rather than hindered that development. Open licensing of software is particularly important because of the dynamism of technological developments. Under the status quo, code under an all-rights-reserved copyright owned by a principal investigator or a university is likely to underused or orphaned as new formats and new platforms are developed that the grantee chooses not to make the investments to upgrade to. In contrast, under an open license, an educational game or other software product can be invested in by any member of the public who identifies the value of doing so. Substantial experience with openly licensed software demonstrates that this benefit is more than single-use and that entire business models have evolved to support such investments. Specifically, within the open source software community, businesses thrive through a number of models, including:

- Selling of professional services supporting software use and implementation
- Selling of certifications and training
- Selling "software as a service" - subscriptions to updated and improved software
- Partnership and support from private funding organizations
- Selling proprietary improvements and extensions of the software.

These models are used successfully by businesses such as RedHat, IBM, Apple, SourceForge, Mozilla and others. None of these methods are incompatible with the open licensing rule proposed by the Department of Education. That rule only requires that the specific copyrightable product produced with grant funding be made available and licensed so that others can build upon it as well.

B. Improving access and ability to use government funded research and data has previously been of high value

While the proposed rule does not require that grantees provide public access to openly licensed materials, once a member of the public receives a copy of such materials, the license permits that member, and any other member of the public, to provide access by making and distributing copies over the Internet or otherwise.

Evidence from similar contexts demonstrates the proposition that providing public access and at least some rights to reuse valuable, publicly funded information resources meets unmet demands in the marketplace and produces serendipitous follow-on uses enabled by openness.

For example, in April of 2008, Congress directed the National Institutes of Health to require its grantees to provide the agency with the ability - consistent with copyright law - to provide public access to electronic copies of their peer-reviewed manuscripts into the National Library of Medicine's online archive, PubMed Central (PMC). Full texts of the articles are made publicly available and searchable online in PMC no later than 12 months after publication in a journal. Since the implementation of this policy, the PMC database has grown to include more than four million full text articles, with over **one million unique users** accessing the database **every day**. Opponents of public access policies argued that research articles have limited appeal

outside the research community, but the growing use of the PMC database illustrates the substantial demand for high-quality health information among the broader public. While this example is not precisely analogous to the proposed rule because it required grantees to manage copyright to ensure that the agency could provide access (but not reuse), it shows how opening up valuable resources can create new value for the public.

Public access also benefits researchers. A 2015 study found that five years after publication, 2009 NIH-funded articles that were available in PMC were cited 26% more frequently than 2009 NIH-funded articles not available in PMC. Greater citations benefits authors by elevating the visibility of their work and supporting career advancement. (Source: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0139951)

Other benefits of opening up government funded resources are illustrated in Data.gov, where the U.S. government has posted more than 180,000 datasets. Our everyday lives are enriched by applications and products that use government data in ways that could never have been imagined. For example, when shopping for a home you can now download an app that uses government data to tell you everything from school locations to flood zones to crime.

Agencies required to assign a value to these kinds of benefits are placed in a very difficult position because these kinds of uses of government resources cannot be predicted or planned for even though the act of opening up resources and allowing their use makes them possible. In future cases, agencies should be allowed to include a "serendipity multiplier" when calculating the benefits of providing public access and public reuse rights to publicly funded information resources. But, in this case, even without the benefit of such an innovation-friendly formula, the agency correctly identified that the proposed rule will meet a range of unmet demands to reuse these valuable, publicly-funded resources and that these benefits will compound over the nearly century-long duration of the average copyright that subsists in such resources.

Sincerely,

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Attachments:

1. Heather Joseph - CV
2. Michael Carroll - CV
3. Comments of Professor Jorge Contreras on Notice of Proposed Rulemaking: Open Licensing Requirement for Direct Grant Programs (NPRM) Docket ID ED-2015-OS-0105

cc: Sharon Leu, U.S. Department of Education