American Chemical Society

ACS Submission to the National Academies' Committee on the Impact of Copyright Policy on Innovation in the Digital Era

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Impact of Copyright Policy on Innovation in the Digital Era
Priority Issues for Committee Action: ACS Submission

I. Summary

The American Chemical Society (ACS) is a congressionally chartered non-for-profit organization and the world's largest scientific society with more than 161,000 members. ACS advances knowledge and research through scholarly publishing, scientific conferences, information resources for education and business, and professional development efforts. ACS' Publications Division exists to provide ACS members and the worldwide scientific community with a comprehensive collection, in any medium, of high-quality information products and services that advance the practice of chemistry and related sciences. In addition to our *Chemical & Engineering News* magazine and *Symposia Series* books program, we publish over 34,000 research papers (270,000+ pages) annually in print and on the Web in 38 journals. With the introduction of the *ACS Legacy Archives* in 2002, we provide searchable access to over 450,000 original chemistry articles dating back to 1879. Since the beginning of the transition to electronic publishing in the mid- to late-1990s, we have developed, and are continuing to develop, innovative and accessible business models, policies, and practices to support the scholarly communication process, broaden access to information, and spur innovation.

As a socially responsible organization deeply rooted in the scholarly community, we share the interest of the National Academies' Board on Science, Technology, and Economic Policy (STEP) in advancing innovation. ACS believes that success in this area will depend, at least in part, on fostering an environment where copyright incentives and protections are robust and offers the following priority issues for Committee action:

1. Strengthen incentives for private sector organizations to continue significant investments supporting peer review and fostering the discovery and dissemination of trusted, high quality science
2. Develop policies that offer incentives for private sector organizations to facilitate online rights identification and licensing, especially micro transactions
3. Strengthen sanctions against digital piracy
4. Develop incentives for Internet Service Providers (ISPs) to screen posted content for copyright-infringing material
5. Avoid sweeping policy changes that undermine a finely balanced and evolving system

In summary, our recommendations center on strengthening incentives for the private sector to experiment and innovate in providing copyrighted material to the public and avoid inflexible or sweeping policies that will not be able to keep pace with fast moving technology developments and opportunities. While it is possible to adjust voluntary, collaborative activities over time, i.e. after evidence of their results and consequences has been gathered, overbroad or inflexible

policies in the dynamic and rapidly evolving digital market present serious policy challenges when they result in damage to private partners that cannot be undone without burdensome policy adjustments.

In April 2009, President Obama committed to "create conditions for increasing public investment and to take measures that promote investment in the private sector, particularly in science, technology, engineering, innovation, research and development, and to encourage the strengthening of linkages between universities, science institutions." President Obama further noted that strong protection and enforcement of intellectual property rights would help achieve these objectives and contribute to the promotion of technological innovation and the transfer and dissemination of technology. We ask the Committee to take note of this vision in the work ahead.

II. Comments on Specific Recommendations

1. Strengthen incentives for private sector organizations to continue significant investments supporting peer review and fostering the discovery and dissemination of trusted, high quality science

ACS believes that a robust system of scholarly communication is one of the fundamental criteria for fostering innovation in the digital age. Robust scholarly communication in turn requires strong peer review, the essential quality control mechanism of science, and trusted fora for disseminating and discovering high quality research. Both of these do not just happen spontaneously. They are the result of a longstanding partnership between publishers like the ACS and the research community with each contributing key elements. What researchers contribute is well known, but what publishers like the ACS contribute is not.

Every year ACS invests millions of dollars to support our editors in conducting peer review. These costs include (1) the highly skilled people required to manage the process, (2) purchasing, maintaining and updating the technology to streamline the process, (3) keeping track of reviewers and articles, (4) locating and maintaining relationships with possible reviewers, (5) sending articles out to appropriate reviewers and following up with them to make sure the reviews are completed, and (6) reviewing the responses and communicating those responses to authors. These steps are typically managed with the use of specialized software systems that are internally developed, licensed commercially or supported by open source software.

In addition, ACS also invests significant funds in copyediting, proofing, formatting, branding, paginating, adding metadata and identifiers, checking and enhancing artwork quality, converting accepted manuscripts, data and artwork to XML, adding links to ensure interoperability, disseminating and archiving scientific articles, and creating the unique journal fora and identities on which researchers and funders alike rely to make critically important personal and professional judgments. Journals like ours typically support a specific discipline and serve as a central point of contact and information exchange for the members of that community, who are

frequently spread around the world. The reputations of journals like ours, cultivated by their publishers, are also used as an indicator of the importance of the work published therein to a particular field of research and to the public. This infrastructure has supported scholarly communication and spurred scientific and technological innovation for decades and continues to do so in the digital age.

The result of our end-to-end digitization of publishing systems is an award-winning dynamic digital platform with the latest Web 2.0 capabilities – and we continue to invest in hardware and software infrastructures to distribute and archive research literature, updating online tools for authors, editors, reviewers, and end-users as their needs and expectations change, verifying references and creating, managing and maintaining online links, providing coding for digital dissemination, integrating machine-readable tags, supporting reference linking and indexing, and otherwise enriching the content, design and functionality of online publications, supporting the development of interoperable, industry-standard tools for citation and other purposes such as "persistent identifiers"[1], and disseminating relevant information to research communities through abstracting and indexing services, citation databases, table-of-contents alerting services, podcasts, RSS feeds, press communications and sponsorship of conferences, seminars and symposia.

ACS is by no means the only example of this effort. Rapid innovation in the journal publishing industry has dramatically improved functionality and efficiency for researchers, who can now perform complex searches of journals, immediately retrieve and print full text articles, link instantly to other cited articles, export text to other databases and programs, and receive e-mail alerts when new journal issues are released. Voluntary cross-publisher initiatives such as CrossRef, developed with non-government funds, have broadened the impact of these benefits for researchers.

The result of these productivity enhancements has been documented in the field of science. The portion of their time scientific researchers spent analyzing (vs. gathering) information increased dramatically from 2001-2005. Compared to the print-only era, scientists now read 25% more articles per year from almost twice as many journals, and they do so using a smaller portion of their time.[2] This dynamic yields major benefits in research and funding effectiveness.

Copyright protection has provided the ability and the incentive for us, and publishers like us, to invest in making these advances possible. Publishers like ACS depend on copyright protection to enable us fund the investments we make in peer review and the infrastructure necessary to transform a researcher's draft manuscript into a polished, peer-reviewed journal article and enable its global dissemination, discovery, and evaluation in the advancement and integrity of science and innovation.

[1] e.g. unique identifiers for articles to ensure that researchers know they are using and citing the authoritative version of the article

[2] Outsell's Buyer Market Database, Dr. Carol Tenopir (2008)

Finally, copyright isn't only an incentive for investment; it is also an incentive for organizations like ACS to protect the integrity of the scientific record. Organizations like ACS generally have more and better resources to defend and protect copyright than do most individual authors. We provide a single, central contact for dealing with grants of copyright permissions, and this allows consistent policies to be used to govern copying uses. Our publishing agreement itself allows authors considerable rights as to how they may use copyrighted material. As a scientific society, ACS accepts the responsibility for promoting the scientific integrity of published work, and defense of copyright is an element in that process.

2. Develop policies that offer incentives for private sector organizations to facilitate online rights identification and licensing, especially micro transactions

Organizations and individuals alike often discover valuable material on the web but are uncertain regarding the terms under which it may be used or from whom permission for use can be sought. In some cases these materials are so-called "orphan works" where a diligent search must be undertaken. However, in many cases these works, or portions of these works such as a photograph or diagram, are under active management by a person or organization. ACS believes that an opportunity exists to create incentives for the private sector to develop user- and producer-friendly ways of identifying, at the point of use, what uses are permitted or where to go for permission. Such systems could facilitate more vigorous, licensed use of these materials, especially to the extent that they encourage seamless micro transactions (e.g. transactions for single individuals), that could support greater creativity and innovation. Digital rights management systems exist today that are being used for this purpose but incentives to do more could speed experimentation and adoption of creative offerings in this sector.

3. Strengthen sanctions against digital piracy

Over the past several years, organizations and individuals have been illegally acquiring electronic copies of copyrighted U.S. scientific journal articles from government and university libraries and reselling them through online websites to legitimate producers' primary customers globally. U.S. publishers and scientific societies face annual losses estimated to be between $80-100 million as a result of this expanding theft and have been working closely with the Office of the U.S. Trade Representative and U.S. Department of Commerce to address this problem.[3] But digital piracy doesn't only harm publishers like ACS – it also harms legitimate customers by artificially reducing market size and placing unnecessary pressure on honest participants to fund more than their fair share of the products and services they use. It exerts a dampening effect on innovation as legitimate creators may limit or withhold broad exposure of their innovations due to the ease and impunity with which others may copy or employ the fruits of their labor without

[3] 2009 U.S.-China Joint Commission on Commerce and Trade (JCCT) Factsheet. Available at http://www.ustr.gov/about-us/press-office/fact¬sheets/2009/october/us-china-joint-commission-commerce-and-trade

fair compensation. It also diverts financial and human capital into enforcement and protection activities and away from innovation or its useful application. Policy action from the Committee to strengthen sanctions against digital piracy would be welcomed.

4. Develop incentives for Internet Service Providers (ISPs) to screen posted content for copyright-infringing material

At present, incentives for Internet Service Providers (ISPs) to screen content posted on their websites for copyright-infringing material appear virtually nonexistent or ineffective – as are the sanctions for not doing so. This results in platforms that, most often unknowingly, act to facilitate digital piracy and the trafficking of illegal or unlicensed materials. This has a dampening effect on innovation as legitimate creators may limit or withhold broad exposure of their innovations due to the ease and impunity with which others may copy or employ the fruits of their labor without fair compensation. ACS is sensitive to the challenges that are faced by ISPs in such screening activity but believes that improvements in this area can and should be made – facilitated by appropriate copyright policy. Allowing innovation to be discouraged by fostering digital piracy and unlicensed and uncompensated use of copyrighted material, however unknowingly, is ill-advised policy. Facilitating piracy, like piracy itself, serves to dampen innovation as legitimate creators divert financial and human capital into enforcement and protection activities and away from innovation and its useful application.

5. Avoid sweeping policy changes that undermine a finely balanced and evolving system

Good copyright policy can be as much defined by what it doesn't do as what it does. ACS notes that the proposal for the creation of the Committee cites exceptions and limitations to copyright as well as public access mandates as salient issues in copyright policy. While ACS believes that the issues it has raised represent the most productive path forward we recognize that, in the case of exceptions and limitations to copyright for example, over time exceptions will be considered. It is our view that any possible future exceptions or limitation must be developed in the context of the Berne Convention's 3-step test, which requires that any exception must be confined to a certain special case that does not interfere with the normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the rights-holder.

Like other STM publishers, ACS prepares and distributes our materials for and into the research and education communities – communities that constitute our most significant audiences and markets. It is often stated that because education and research are in the public interest, they constitute a "certain special case" on which any copyright exception is premised (first step under the Berne Convention). Also, the presumed non-commercial nature of many educational and research activities is frequently cited as a strong indicator that the use should be legitimized under an exception and does not "interfere with the normal exploitation", i.e. the market, of the

rights-holder (the second step), or is not "unreasonably prejudicial" to his/her interests (the third step).

Like most STM publishers we believe the public interest of research and education is best served by encouraging the creation of new publications and information services with these audiences and markets in mind. Offering publications and information services to these non-commercial communities, e.g. by way of subscription or individual journal article supply, is the very essence of "normal exploitation" which must be left free of exceptions that prejudice the legitimate interests of rights-holders unreasonably.

We believe that any exceptions and limitations for education and research dealing with STM materials would need to be carefully and cautiously crafted to minimize any potential distortion of this critical and well-functioning system for scholarly communication. Given that STM materials are prepared specifically for the educational and research context, this context does not constitute a "certain special case" (1st step under Berne Convention) in relation to STM materials. An unqualified exception that includes all STM materials would also interfere with the normal exploitation of the work (2nd step under the Berne Convention). Recognizing this, a number of copyright laws with digital exceptions and limitations pertaining to research and education exclude STM materials designed for such markets, i.e. an "exception from a more general exception", as one of a number of specific qualifiers the exception or limitation. Further, any exception or limitation newly introduced would also fully need to take into account the amplified risks of the digital environment – i.e. for widespread unauthorized downloading and use that undermines creators' rights and place an undue burden on legitimate users.

ACS is aware of the information needs of researchers and educators, the general contributions that such scholars make towards society, and the role that specialized libraries play in the dissemination of knowledge. We recognize that some exceptions and limitations remain relevant in the digital environment and support those exceptions and limitations. We believe that the principles stated above, if carefully applied, will not erode or interfere with the market for scholarly communication and call the Committee's attention to the paper *Digital copyright exceptions and limitations for scholarly publications in the education and research communities* available on the website of the International Association of Scientific, Technical, and Medical Publishers (STM) at http://www.stm-assoc.org/2008_06_01_STM_Position_on_Digital_Copyright_Exceptions.pdf

With regard to copyright policy and public access mandates, should the Committee elect to address this topic, we refer to its attention two important documents produced by or on behalf of the Association of American Publishers (AAP). The first is a letter from Jon A. Baumgarten of the Washington D.C.-based firm Proskauer Rose LLP regarding the relationship between the NIH final policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research and the U.S. Copyright Act, other copyright laws, the Berne Convention for the Protection of Literary and Artistic Works, and the Agreement on Trade Related Aspects of

Intellectual Property ("TRIPS"). The full opinion is available from any number of sources, including ACS and AAP, but we excerpt Mr. Baumgarten's summary for the Committee:

For the reasons set forth in the remainder of this letter, I believe that the Final Policy raises serious questions and substantial doubt pertaining to its consistency with copyright law and to the United States' compliance with its obligations under the Berne Convention and TRIPS; and may well provide a precedent and template for other countries to depart from important standards of international copyright protection and trade.

We also commend to the Committee's attention a subsequent letter from Mr. Allan Adler, AAP Vice President for Legal & Government Affairs, to The Honorable John Conyers, Chairman of the House Committee on the Judiciary that summarizes and responds to comments received regarding Mr. Baumgarten's opinion. We believe the Committee will find both documents useful in any review it undertakes of this issue.

Acknowledgements:

AAP (2008): *Adler letter to Conyers regarding "Fair Copyright in Research Works Act" (H.R.6845)*

AAP/ DC Principles Coalition for Free Access to Science: (2010) *Submission to the OSTP RFI on Public Access Policies for Science and Technology Funding Agencies across the Federal Government*

Proskauer Rose LLP (2008) *Baumgarten opinion for AAP on the relationship between the NIH final policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research and the U.S. Copyright Act, other copyright laws, the Berne Convention for the Protection of Literary and Artistic Works, and the Agreement on Trade Related Aspects of Intellectual Property*

STM: (2008) *Digital copyright exceptions and limitations for scholarly publications in the education and research communities*