

How the Public Domain Will Revolutionize Science and Medicine (Open Access 2.0)

Moderator and Panelist:

Gavin Yamey

PLoS Neglected Tropical Diseases
San Francisco, California

Panelists:

John Wilbanks

Science Commons
Cambridge, Massachusetts

Ida Sim

University of California,
San Francisco
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Christopher Surridge

PLoS ONE
Cambridge, United Kingdom

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American Heart Association
Dallas, Texas

Moderator Gavin Yamey, of *PLoS Neglected Tropical Diseases*, opened the session by reminding the audience that open access has two components: freedom to read the literature (with no economic barriers to accessing it) and freedom to reuse it. The session's main focus was on the scientific and social benefits of such freedoms. Yamey described how open access can begin to redress the economic inequities of scientific and medical publishing.

Restrictive copyrights and fees for subscriptions and reprints prohibit researchers and clinicians in developing countries from producing copies, derivative works, and translations. Allowing such reuse could help to solve problems locally or inspire new research approaches. With those barriers lowered, Yamey said, digital technologies could serve researchers, clinicians, and educators better and help to create and link bodies of knowledge through text-mining and creative public reuses like

mashups (combinations of elements from different sources).

John Wilbanks, of Science Commons, discussed legal alternatives to traditional, restrictive copyright and license agreements. To lower legal barriers and facilitate collaboration, Science Commons offers researchers standardized and simplified copyright agreements, license agreements, and biologic-materials transfer agreements, which grant permission for any legal use or reuse with proper attribution and citation in any derivative works. Wilbanks said that the published article, to which copyright restrictions are applied, "is a static document in which ideas, data, and more are compressed into a single flat document". The ability to extract data and knowledge from the document has more value in the digital world.

Christopher Surridge, of *PLoS ONE*, discussed the changes that open access will produce in how articles are read and used. He used the evolution of the Internet to illustrate his point. Once a venue for posting information that was static and read-only, the Internet now allows users to comment on, update, and discuss an article, making it dynamic and increasing its impact. This capacity for interactivity is integrated into the online open-access journal *PLoS ONE*. Surridge showed how readers can make comments and annotations in a full-text article for the author and other readers to see and discuss. Surridge warned, "If you don't allow readers to interact with your article, it will become irrelevant."

Ida Sim, of the University of California, San Francisco (UCSF), described the sheer volume of published data in journals as a barrier to improving implementation of evidence-based clinical practices. Focusing on published reports of randomized controlled trials (RCTs), Sim explained that with 10,000 new RCTs published each year, it is difficult for most clinicians to read, interpret, and implement best prac-

tices from articles. Trial banks can help clinicians to find and make sense of RCT results and recommendations faster and more easily than reading full-text articles. In the Trial Bank Project developed at UCSF in collaboration with *Annals of Internal Medicine* and the *Journal of the American Medical Association*, RCTs were published as full-text articles in one of the two journals, and the structure, execution, and data were also entered into a database, allowing public users to access and organize information through an interface called RCT Presenter. Sim explained that this project was only a beginning. The next step is to develop methods for extracting computer-readable information from articles automatically.

The session's title suggested that the impact of the public domain on science and medicine is yet to be realized. Surridge summed up the session by stating that "everything we're talking about today is not the future. It is today." Improvements in information and computer technologies will accelerate data-mining and make extracting knowledge from full-text documents more efficient, but such improvements remain impossible given that most of the biomedical literature remains subject to access barriers and traditional, restrictive copyright. The panelists argued that once open-access advocates have demonstrated some of the powerful applications made possible by the freedom to read and reuse literature and data, the open-access debate is likely to shift. From that perspective, they believe that the public domain is going to revolutionize science and medicine. 🌐