

STM Publishers: Innovating Scholarly Communication for today and tomorrow

STM publishers are at the forefront of innovation. Our commitment to supporting and adapting the tools offered by the web and cutting-edge technological solutions to enhance scholarly communication has resulted in huge benefits for the research community, transforming the way in which scholars share information and collaborate. This in turn also has relevance for society as a whole – informing important decisions about healthcare, the economy, our environment, technology and government.

STM publishers, through their industry association, foster a culture of innovation by constantly sharing evolving technology trends and their impact on scientific publishing. The industry association's annual "Innovation Seminars" provide a state-of-the-art overview of new developments.

STM publisher innovations are helping to create a major shift in the ways in which research is disseminated and used.



Enhancing digital publications

STM publishers have developed tools which take readers beyond the traditional peer-reviewed research paper by combining text with multi-media tools. This combination helps scholars gain new insights into published research by allowing them to visualize key concepts described in the texts of our publications. Chemists can now see interactive formulae on their screens, in 3-D and with links to chemical structures. Marine biologists can see research brought to life by viewing videos of shark's behavior; medical students can view operations – not for the squeamish! Through videos posted on journal websites researchers themselves speak directly to colleagues about their work – providing additional context and insights.

STM publishers are also enabling scholars to use and augment the findings in published papers by facilitating access to the raw research data on which an article is based. This capability has been developed in response to a growing demand for raw research data to be easily accessible, searchable and seamlessly linked into a scientific publication. By enabling researchers to generate, use, re-use and process information, STM publishers help further scientific inquiry.



Social Collaboration

Social media is transforming the way many of us communicate with friends and family. These same tools are also transforming the ways in which researchers collaborate. STM publishers are actively involved in projects which allow the research community to collaborate online using the power of web 2.0 tools. Examples include:

- Nature Networks and AIP UniPHY, social networking sites for scientists, which have greatly facilitated interactions within the scientific community they serve;
- social bookmarking tools like digit, citeulike, del.icio.us, bibSonomy and facebook - making sharing recommended resources easy;
- practical guidance given to editors, authors and scholarly societies that allow them to blog, tweet, facebook, get linked-in, youtube, etc.

STM publishers are also leading discussions on how to better organize the world's research through Digital Identifiers (DI's). A widely-accepted and successful standard in the STM-world is the DOI (Digital Object Identifier), applied for reference linking

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between two-thousand publishers worldwide via Crossref¹ – a non-profit organization created by publishers for this purpose. Other projects underway include:

- assigning unique identifiers to researchers to add greater authority to the scientific record (the ORCID Initiative), as well as allowing scholars to track and collaborate with colleagues
- providing tools to help identify and acknowledge funders on published research
- creating unique institutional identifiers, to help the industry offer improved services to our university partners.

Datamining, metadata, search

Providing and publishing research information is not an aim in itself: it is merely a tool in the discovery process of researchers and scientists. Publishers actively work with new data- and text-mining tools, collaborate, and develop metadata standards that make it easier to discover knowledge and new connections between publications, thus creating knowledge. Some of the tools used to do this include federated searching; open URL standards; and the semantic web.

Federated search allows librarians to offer their community the ability to search their library catalogue to find the resources they need and to which they have access. Publishers are collaborating with third-party vendors on the next generation of these tools, including Serials Solutions' Summon software - a simple-search service for library catalogues that provides a Google-like search experience, but with more targeted results from a researcher's own library resources.

Open URL has empowered library users by offering them a quick and accurate route to the content they need.

The Royal Society of Chemistry's Project Prospect is an excellent example of how one publisher is making use of the semantic web to enrich the research environment. The Society has used metadata to annotate chemical data, compounds and concepts to help researchers find relevant related research.

Making Research Mobile

iPhones and eBook readers present a wealth of opportunities for readers to access content on the move. Publishers from across the STM industry are proactively working with the current market leaders in eBook readers and other mobile devices to make their publications as mobile as the people who use them.

There's an app for that! Smartphones, especially the iPhone, provide publishers with

¹ <http://www.crossref.org>

the opportunity to equip researchers with tools to approach their research in new and innovative ways through mobile applications. Nature, New England Journal of Medicine and IEEE all have, or are about to, launch their first iPhone apps.



Digital Preservation

STM publishers are committed to a digital future and are acutely aware of their responsibility to preserve today's research for tomorrow's researchers. We participate in industry-wide projects to protect research output from rapid digital innovation by collaborating with PORTICO², CLOCKSS³, LOCKSS⁴ and key national libraries committed to Digital Preservation. STM publishers have also established an industry working group to ensure high quality input on all current initiatives.

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² <http://www.portico.org>

³ <http://www.clockss.org/clockss/Home>

⁴ <http://lockss.stanford.edu/lockss/Home>