Shaking it up: embracing new methods for publishing, finding, discussing, and measuring our research output

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ABSTRACT

The scholarly communication ecosystem is changing. Scholars produce and publish a wider range of products than ever before, and scholars and others increasingly interact with these diverse products in new ways within the online ecosystem.

The widespread availability of research products and interaction paths is informing new methods for finding, discussing, measuring, and rewarding diverse types of research output.

Some research fields are adopting these new methods faster than supporting tools, processes, and policies can keep up. In other fields the changes are happening very slowly – perhaps at the expense of accelerated progress and impact.

We have assembled a panel of information science researchers who both study and implement many of these new ways of doing research. Together with attendees of the session (you!), we will consider several new methods of scholarly communication, highlight some of their strengths and drawbacks, and discuss how they play out today in the field of information science.

The session will itself follow a nontraditional format. **We will begin with an out-of-your-seat and into-the-action icebreaker** to capture audience-driven opinions of several fundamental issues behind these changes. Panelists will then briefly highlight several of the new approaches, including motivation, evidence of benefit (or lack thereof), and how the new method is or could make a difference in information science research.

We encourage audience members to document their thoughts on these points during the panelist presentations. Audience notes will be summarized in a poster within the Interactive Showcase later in the conference.

We hope this panel will inspire conversation about the ways these new approaches may impact how we study scholarly communication, as well as how we participate in scholarly communication ourselves.

Keywords  
scholarly communication, information dissemination, data archiving, open science, collaborative filtering, alt-metrics.

EMERGING METHODS AND OPPORTUNITIES

The overall topic of the panel is “embracing new methods for publishing, finding, discussing, and measuring our research output.” The trends and opportunities we will highlight are described below.

Nontraditional research products

Scholars are producing and publishing a wider range of products than ever before. Research projects produce not just journal and conference publications, but also datasets, source code, blog posts, preprints, videos, and educational resources.

Nicholas Weber, a PhD Student at the University of Illinois Urbana-Champaign will talk about the emergence of
research data as a primary scholarly product. In our current milieu, data drives much of the scholarship; from digital humanities to eScience there is an increasing demand and dependence on curated collections of high quality data. The traditional activities of information science – tracking, measuring impact, developing accurate retrieval and storage systems, and studying patterns of use and reuse (Bawden, 2008) – are complicated by complexity, scale, and a current lack of formal attribution practices of data producers and consumers. If information science is to sustainably develop a research agenda centered on data as a scholarly product, there remains many policy, infrastructure and cultural hurdles to address in the immediate future.

Heather Piwowar, a postdoc with the DataONE project and the Dryad Digital Repository, will talk about additional forms of nontraditional research product dissemination. Scholars are increasingly circulating research results and contributions openly, early, and in nontraditional formats, including preprints, open notes, blog posts, stand-alone figures, videos, and open proposal drafts (Conway 2011). These avenues reward the researcher with increased visibility and opportunity for discussion and collaboration, and also reward the research community and the public with transparency and access. Are the time commitments and risks worth these benefits? Are the benefits real? Are we doing enough to encourage and reward nontraditional forms of research dissemination? Heather will discuss these issues as someone who both participates in nontraditional methods of dissemination and someone who studies their adoption.

Nontraditional forums for discussion
Scholars and others increasingly interact with research output in a complex online ecosystem. Research products are bookmarked in Mendeley and CiteULike and discussed in new forms of research communication like blog posts, on-article comments, Twitter, and Facebook.

Christina Pikas, a doctoral candidate at the University of Maryland’s iSchool, will talk about the use of Twitter at scientific meetings. Garvey, Tomita, Lin, and Nelson (1972) were the first to provide a comprehensive view of how scientific conferences fit into scholarly communication. The use of Twitter with its combined oral culture (Tufekci, 2011), asynchronicity, and archivability, changes this fit and provides new ways to share, discuss, and track research output.

Nontraditional processes for discovery
Widespread availability of these research products and discussion can inform new methods for finding diverse types of research output.

Alex Garnett, a Ph.D. student in Information Science at the University of British Columbia and a collaborator with the Public Knowledge Project, will talk about the pragmatic rationale for Open Access publishing. For example, building a robust collaborative filtering system (also called a recommender system) for scholarly materials is hardly feasible without being able to mine article content for indexing – and hardly viable if only a small audience has sufficient access privileges to act on its recommendations. This simple restriction has been handicapping academic reading behaviour for as long as we have had article abstracting databases, where any behaviour that could be called “browsing” is limited to whatever tools can be implemented by individual content silos.

Nontraditional impact measures
Interaction with online tools can be tracked and used to inform new, faster, and broader metrics of impact and also create new areas of research and innovation.

Kim Holmberg, a postdoc researcher at the Department of Information Studies at Åbo Akademi University, will talk about a novel metaphor for scholarly communication in social media as online information ripples. Blogs, tweets and other discussions can spread online like ripples on water in every direction and these information waves can be studied using methods from physics. The benefit of studying information dissemination as ripples or waves in social media is that it opens new possibilities to new discoveries using methods previously not used in information science.

Jason Priem, a doctoral student at UNC-Chapel Hill, will talk about alternative metrics of scholarly impact, or “altmetrics” based on these informal, social-web conversations. Citations have long been relied upon as indicators of impact, but they measure only one dimension of importance. Scholars may bookmark, store, annotate, mention, discuss, and argue about important research, as well as cite it formally. Traditionally, these alternative interactions took place in the shadows, but today online reference managers, bookmarking tools, blogs, microblogging, and other tools are bringing the penumbra of scholarly interactions to light. Tracking these alternative metrics will help us build broader, more diverse, and more timely indicators of impact that can be used to inform realtime filters and even support hiring and policy decisions.

PANEL FORMAT
The proposed panel session has three parts.

Audience icebreaker viewpoints
The panel session will begin with an audience-participation icebreaker. The moderator will make a statement and ask all audience members to stand in a position along an invisible line in the room that best describes their reaction to the statement: one side of the room is for those who “strongly agree” and the other side is for those who “strongly disagree,” with intermediate opinions between.
Participants find themselves standing beside some usual suspects and some surprising allies. The moderator will then call on a few people, one at a time, to explain why they chose to stand where they are standing. This is repeated with three statements, chosen to be orthogonal in topic so that people don’t necessarily distribute themselves the same way.

Proposed statements:
1. We should thoroughly understand the implications of new methods of scholarly communication before adopting them.
2. The scholarly reward system rewards the wrong things.
3. Information Science should to be more progressive than other disciplines in experimenting with new methods for scholarly communication.

Panel contributions
Each of the panelists mentioned above will briefly highlight one of the new approaches to scholarly communication. In about 3 minutes, each panelist will summarize:
• Motivation for the new approach,
• Evidence of benefit (or lack thereof), and
• How the new method is or could make a difference in information science research.

The audience will be given response forms to fill out during the presentations and encouraged to anonymously fill out a few scale and short response questions for each topic:

Scale response (on 7pt scale from strongly disagree to strongly agree)
• Information science already does this
• Adopting this is (or will be) important for information science
• This is very risky
• I want to try this out
• I know how to do this

Short response:
• Yeah, But….
• I’d like to see this happen because….

Remaining time will be used for questions from the audience.

Summary of audience participation
Audience notes will be summarized in a poster within the Interactive Showcase later in the conference (assuming the associated poster proposal is accepted).

CONCLUSION
A few of the new ways of doing scholarly communication are clearly beneficial. Others are controversial, or complicated, or too new to be well understood.

We hope to inspire conversation about these issues and how they might influence both our research methods as we study scholarly communication, and also our own personal and community practices as information science scholars.

REFERENCES

