From Library Catalog to Enterprise Knowledge Graphs: Shaping the Future of Metadata Education

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Abstract

As AI, linked data, and semantic technologies reshape the information landscape, LIS programs must evolve to prepare students for emerging roles in knowledge organization. This panel—featuring panelists from academia, libraries, and industry—discusses how information organization principles can be applied across sectors. Panelists will explore curriculum gaps, nontraditional career paths, and the importance of practical training and soft skills, inviting dialogue on building more inclusive and responsive LIS education.

Keywords

AI, information technologies, iSchool curricula, evolving role of information professionals

1. Introduction

As institutions increasingly adopt emerging technologies such as linked data, the semantic web, and artificial intelligence, the metadata creation landscape continues to evolve—becoming more diverse, distributed, and dynamic. Amid these changes, a central question persists: Where and when should students acquire the skills essential for success in the field of information organization?

Since the master's degree is the terminal degree required for librarianship, both researchers and practitioners have explored whether iSchool education can—or should—equip students with these necessary skills. Analyses of job descriptions have revealed that while practical knowledge and technical expertise are crucial, they are not sufficient on their own [1, 2]. However, these additional skills are difficult to teach through curriculum changes alone and are often cultivated through a range of experiences beyond formal iSchool education [3].

While the roles of libraries and metadata professionals continue to evolve, their core mission remains unchanged: to ensure that information and knowledge are accessible to all. In this context, it is essential for students to develop a strong foundation in information organization

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theory and history through their iSchool programs. This theoretical grounding forms the backbone of practice, enabling students to understand, adapt to, and shape both current and emerging approaches. iSchools not only expose students to library-based practices but also encourage engagement with broader information environments—including those in business and technology—where information organization theory is highly valued. By bridging theory and practice, iSchool education plays a critical role in preparing students for dynamic and impactful careers as information professionals.

This panel—featuring a senior ontologist, educators in metadata and information organization, and a research librarian—will initiate an open discussion about the current state of the information profession and iSchool education, encouraging collaborative thinking toward a more inclusive and responsive model of education in information and knowledge organization.

2. Panel Structure

Panelists will discuss and share perspectives and expectations from their specific roles, as a traditional librarian, a senior otologist at industry, and iSchool educators as below.

- Myung-Ja K Han: shares the changing environment in library cataloging and metadata creation and management based on trends found from the research libraries, as well as the evolving role of cataloging and metadata professionals' responsibilities and required qualifications associated with the change. The presentation will also include approaches to how the professionals can acquire and advance new knowledge.

- Josh Falconer: discusses how LIS programs can better prepare students for emerging roles in enterprise knowledge organization by addressing curriculum gaps and expanding beyond traditional career paths. Drawing on his work as an Ontologist at Indeed and Senior Ontologist at Bloomberg, as well as experience mentoring and interviewing job candidates, he will highlight the need for early awareness of nontraditional opportunities, cross-disciplinary coursework, deeper training in ontology engineering, and practical experience through internships or independent study. He will also reflect on the organizational and interpersonal challenges of applying metadata and semantic technologies at scale, and how LIS programs can support the development of both technical and soft skills needed to bridge data silos and disciplinary divides.

- Christine D'Arpa: brings the perspective of a faculty member teaching Master's students in information and knowledge organization, which she frames as core and foundational courses. Her talk will explore the balance between building technical skills and cultivating intellectual curiosity and historical awareness. In the context of AI, she will briefly address the importance of discussing power, ownership, and the political economy of these tools—emphasizing the need for critical engagement rather than uncritical adoption.

- Rhiannon Bettivia: speaks about structuring pedagogy within the LIS masters. A 2-year terminal degree program is often an inch deep and a mile wide, making it challenging to teach specialist courses that have numerous prerequisites. As a case study, she will speak to Simmons' Metadata 1 and Metadata 2 classes. These classes center the wider landscape of metadata beyond LIS, juxtaposing the ways in which different domains have different

approaches and concerns in relation to metadata with what remains similar across domains.

Following the presentation, the discussion will open to the audience with a set of guiding questions aimed at assessing the current state of iSchool curricula in the areas of information and knowledge organization and exploring ways to better prepare students for emerging skill requirements in the fields.

3. Moderator/Speaker Bios

Myung-Ja (MJ) K. Han is the Andrew Turyn Professor and Metadata Librarian at the University of Illinois Urbana-Champaign. Her research interests include metadata interoperability, information management, and the application of information technologies in libraries. She has served as Co-PI on research projects funded by the Andrew W. Mellon Foundation and the National Endowment for the Humanities: Exploring the Benefits for Users of Linked Open Data for Digitized Special Collections and Emblematica Online. She is also the co-author of two textbooks on XML. MJ currently serves as Chair of the Program for Cooperative Cataloging (PCC).

Josh Falconer is a Senior Ontologist at Bloomberg, where he leads a team of ontologists in semantic modeling for an enterprise knowledge graph. Previously, he was an Ontologist at Indeed. For more than a decade, he served in various bibliographic metadata cataloging roles, with a focus on manuscript library collections from the Middle East and North Africa. His recent research interests center on knowledge organization systems, event representation, and cognitive linguistics. He has earned degrees in philosophy, Semitic languages, and library and information science.

Christine D'Arpa is Associate Professor in the School of Information Sciences at Wayne State University in Detroit. She earned her MS and PhD in Library and Information Science at the University of Illinois Urbana-Champaign. Her research focuses on public libraries, library labor and education, and community engagement. She was Co-PI on two grant-funded research projects: IMLS National Leadership Grant, "Community health and wellness: Small and rural library practices, perspectives, and programs", and the Mellon Foundation, "Public libraries and food justice". Her teaching includes courses in community engagement, cultural heritage, and archives. In addition, she has taught the foundational course in LIS, Organization of Information.

Rhiannon Bettivia is an Associate Professor at the School of Library and Information Science at Simmons University in Boston, Massachusetts. She earned her PhD in Information Science at the University of Illinois, Urbana-Champaign. Her research focuses on digital preservation, metadata, and provenance in the areas of popular culture and interactive media. She was Co-PI on the IMLS-funded Building Community Around Provenance grant and is co-author of the book Documenting the Future: Navigating Provenance Metadata Standards (Springer). She has published work in journals such as the Journal of Qualitative Inquiry, the International Journal of Digital Curation, the Journal of Education for Library and Information Science, Digital Humanities Quarterly, the Journal of Documentation, and the Annual Review of Information Science and Technology. She teaches graduate courses in metadata, digital preservation and stewardship, and A/V preservation.

References

[1] B. Evans, J. Liss, M. McCourry, et al. "Core Competencies for Cataloging and Metadata Professional Librarians: Assessment of Community Use and Recommendations for the Future of the Document." Library Resources & Technical Services (2023): 67(4):114-123. doi:10.5860/lrts.67n4.114.

[2] Core Competencies for Cataloging and Metadata Professional Librarians. 2024. https://www.ala.org/news/2024/01/revised-competencies-cataloging-metadata-professional-librarians.
American Library Association, Association for Library Collections & Technical Services: Fundamentals Web Courses. (2024). https://www.ala.org/news/2024/03/announcing-2024-core-fundamentals-web-course-schedule#:~:text=The%20Fundamentals%20Web%20Courses%20focus,design%20for%20learning%2C%20and%20institutional.