



OCLC Americas Regional Council Conference

# Crafting Library Narratives; Data Mining and Assessment for Stakeholders

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**#OCLCARC18**



*Librarian knowledge and skills of  
tools for visualizing, mining and  
managing large and complex  
research data: A systematic review*



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Campus*

# The Medical Library Association (MLA) Research Agenda

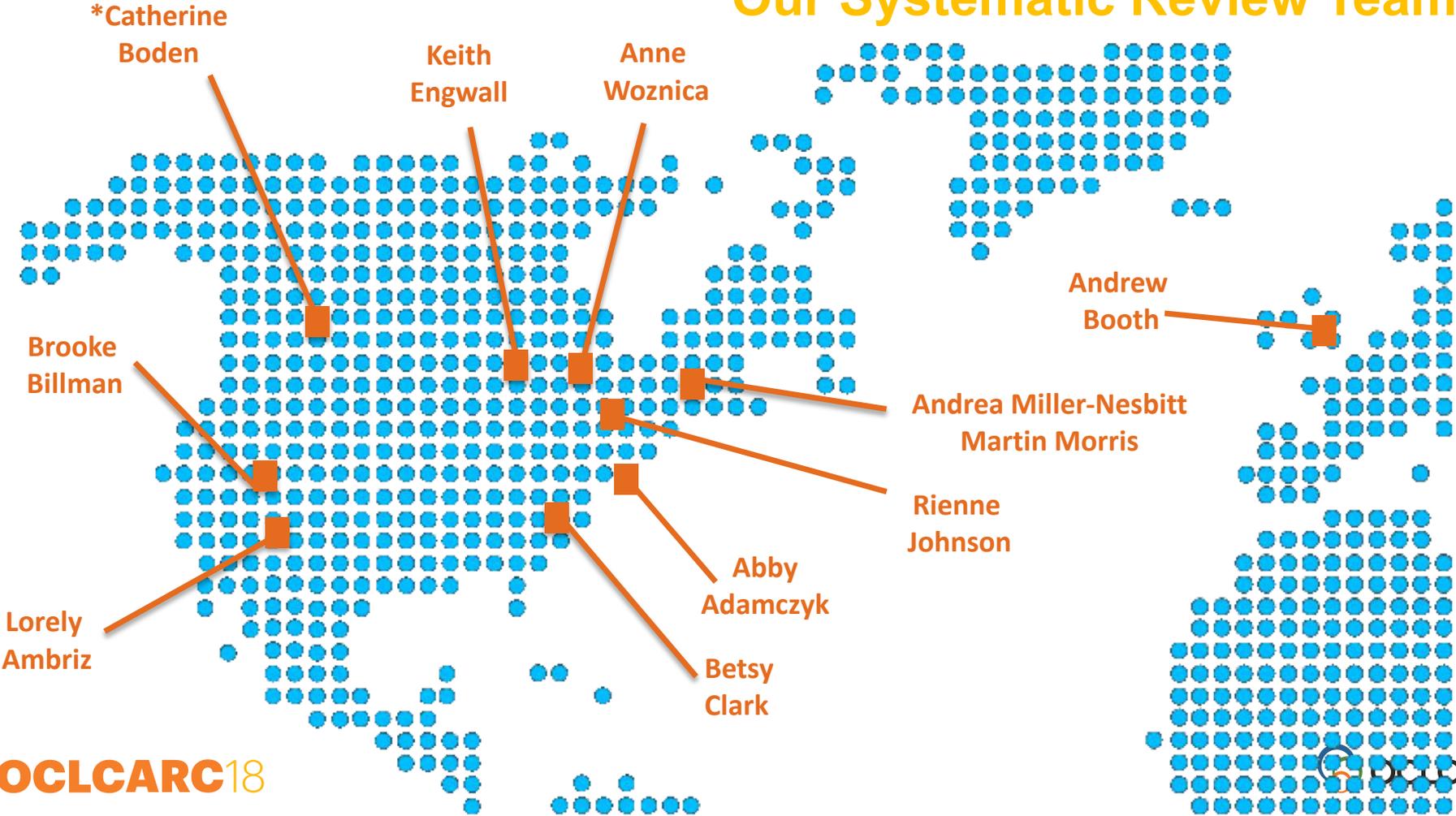


- ▶ **Top 15 questions identified by MLA Research Section**
- ▶ **Teams of ~10 librarians tasked with conducting a systematic review on each of the 15 questions**
- ▶ **Timeline = 3 years and counting**

# Objectives

- 1. Conduct a systematic review to address one of the questions identified in the MLA Research Agenda: Appraising the Best Available Evidence.**
- 2. Develop systematic review expertise in health sciences librarians**

# Our Systematic Review Team



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# Our Team Research Question

*What skills and knowledge must librarians possess in order to be able to design tools to help researchers visualize, mine, and otherwise manage large and complex data gathered during both quantitative and qualitative research?*

# Methods

Literature search strategies were developed by the research team for three main concepts:

1. competencies
2. librarians
3. research data



# Methods

## Databases Included

- PubMed 1946-
- EMBASE, Ovid 1947-
- Library, Information Science & Technology Abstracts (LISTA), EBSCO 1960-
- Library Literature & Information Science Full Text, H.W. Wilson, 1969-
- *Library and Information Science Abstracts (LISA) via ProQuest*
- Association for Computing Machinery (ACM) Digital Library
- Education Resources Information Center (ERIC), EBSCO
- Web of Science
- ProQuest databases
  - Applied Social Sciences Index and Abstracts (ASSIA) 1987-
  - Australian Education Index 1977-
  - British Education Index 1975-
  - International Bibliography of the Social Sciences (IBSS), 1951-
  - Periodicals Archive Online
  - ProQuest Dissertations & Theses: UK & Ireland
  - ProQuest Dissertations & Theses A&I
  - ProQuest Education Journals 1988-
  - Social Services Abstracts 1979-
  - Sociological Abstracts 1952-
  - Technology Research Database- 1962

# Methods

## Approved Search Strategy

(ab(train\* OR skill\* OR knowledge OR curriculum OR competenc\* OR abilit\* OR recruit\* OR talent\* OR education OR programming OR "career development" OR "professional development") OR ti(train\* OR skill\* OR knowledge OR curriculum OR competenc\* OR abilit\* OR recruit\* OR talent\* OR education OR programming OR "career development" OR "professional development"))

AND

("Data" OR "Information") adj1 ("Specialist\*" OR "Scientist\*" OR "Professional\*" OR "Manager\*" OR "Broker\*")

(ab("Data Specialist\*" OR "Information Specialist\*" OR Librarian\* OR "Information Science" OR "Information Scientist" OR "information scientists" OR "Information Professional" OR "information professionals" OR "Information broker" OR "Information brokers" OR "Knowledge Manager" OR "Knowledge Managers" OR "Informatics" OR Informationist OR MLIS OR LIS OR MSIS OR MCLIP OR iSchool OR (MA AND information) OR (MA AND library) OR (MS AND information) OR (MS AND library) OR (MSc AND information) OR (MSc AND library) OR

(masters AND information) OR (masters AND library)) OR ti(Librarian\* OR "Information Science" OR "Information Scientist" OR "information scientists" OR "Information Professional" OR "information professionals" OR "Information broker" OR "Information brokers" OR "Knowledge Manager" OR "Knowledge Managers" OR "Informatics" OR Informationist OR MLIS OR LIS OR MSIS OR MCLIP OR iSchool OR (MA AND information) OR (MA AND library) OR (MS AND information) OR (MS AND library) OR (MSc AND information) OR (MSc AND library) OR (masters AND information) OR (masters AND library)))

AND

(ab("data" OR repositor\*) OR ti("data" OR repositor\*))

# Methods

## Eligibility Criteria

1. Competencies, Skills and/or Knowledge
2. Research Data
3. Tools



# Methods

## Data Extraction and Synthesis

1. Two reviewers independently extracted data using a purpose-specific and piloted form. An adaptation of the 'best fit' framework synthesis methodology .
2. We selected the Digital Curation Centre (DCC) Curation Lifecycle model, as a broadly applicable framework for extracting data relevant to the data curation process which underpins effective management of research data.

# Results

## Full-Text Articles

1. A total of **28,848** results were identified through database searching.
2. Duplicates were removed resulting in **25,291** unique database records.
3. Application of custom EndNote search filter resulted in **5,921 unique citations**.
4. **5,686** citations were excluded through a review of the titles and abstracts.
5. The reference lists of the **235** articles were reviewed and full text of **38** potentially applicable articles was screened. Of the **273** articles, full text review resulted in the **inclusion of 29 records**.



# Results

## Books



1. A search of WorldCat for book titles resulted in **647** records.
2. After duplicates were removed **634** titles were single-reviewed resulting in the inclusion of **31** .
3. The table of contents were screened, excluding **16** titles, and **22** chapters were identified to review. Full text review of the chapters resulted in inclusion of **1** chapter.



# Results

## Summary

**1. In summary, 34 records were included with the following publication types:**

- journal articles (22)
- conference papers (5)
- editorials (4)
- dissertations/theses (2)
- book chapters (1)
- Of the journal articles, contribution types included program descriptions (12), original research (6), and reviews of the literature (4).



# Conclusions

- ✓ Various papers asserted that **librarians already had many of the competencies needed** to support research data management services.
- ✓ **Knowledge of curation-related activities** and operations could be adapted to address the unique requirements of scientific data.
- ✓ Librarians' skill in **building relationships with researchers**, including understanding their subject area and practices, facilitates the data curation process.
- ✓ Librarians can share their **expertise in datasets** to provide support to the **repository builders** and those **collecting the data**. Cataloging, metadata, security, access, and discoverability could all be applied to datasets.
- ✓ However, several commentators contended that the **existing workforce does not possess the technical skills needed to curate data and develop tools**.

# Conclusions

## Competencies Needed

Competencies found in our our review are ones librarians likely already possess and are directly transferable to the design of tools to manage complex research data:

1. Understanding Context for System and Tool Requirements LIS Principles for Representation and Metadata
2. Knowledge of the Researchers' Discipline
3. Collaboration and Interdisciplinary Work
4. Knowledge of Information Systems & Technologies

# Conclusions

## Recommendations Inherited from Our Research

- Considerable variation across geographical regions, institutions, and specific jobs in librarian roles and the associated competency requirements for designing tools for managing research data and skills for RDM.
- LIS schools need to also play a role by adjusting their curriculums to prepare new graduates (theoretical grounding)
- Who is going to help us get to the point where our profession has the right skill set? professional organizations / library leadership.

# Conclusions

## Recommendations Inherited from Our Research

1. **Narrowly defined research questions that can be answered with one kind of data (e.g., quantitative) lend themselves better to “learning by doing”**
2. **At least one person on the team should be an experienced systematic reviewer in the type of question being asked (qualitative, quantitative, mixed).**
3. **All research team members should have knowledge of the SR topic.**
4. **It has been a great learning experience that should be repeated.**

# “What we learned...”

“...Networking and new professional contacts/relationships forged”

“Participating in this project has helped me better understand the processes that the researchers I help go through”

“I found the experience of conducting a systematic review to be the most effective way to work out the inherent subtleties and complexities...”

“I feel I’m in a position to help researchers manage the process...”

# Tools for Team Collaboration

- Started with **Basecamp** for doc sharing etc.....but naturally moved to **Google Docs** and **DropBox**.
- Simple **Google Sheets** to formulate, calculate, consensus and highlight disagreements.
- **Trello** and **Google Forms** for screening.
- **EndNote** as a database and for deduplication.
- **Publish or Perish** to identify the citing articles of the included records.
- **Blackboard Collaborate** and **WebEx** to meet weekly for team work and collaboration.
- **Doodle** for scheduling.

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# Analysis of Full Text Article and Book Screening- Excluded Included

File Edit View Insert Format Data Tools Add-ons Help

100% View only

RefID	A	B	C	E	F	G
RefID	Author(s)	Which search	Pub type- DE	type of contribution- DE		
x312		2014	Conference - Pa	Program Proposal — a proposal or conceptual descriptions of future programs (includes processes, project, technical processes etc)	excluded during man	
x3760		2014	Journal Article	Program Description with/without Evaluation — description of program that has been done	excluded during man	
x3864		2014	Journal Article	Research — original research in which the methods include data collection (including job ads) & analysis; generalizability to others		
129	Ginger, Jackman, C	2014	Conference - Pa	Program Description with/without Evaluation - description of program that has been done		
1197	Yamashita, Miller, C	2014	Journal Article	Program Description with/without Evaluation - description of program that has been done		
2787	Garritano, Carlson	2014	Journal Article	Program Description with/without Evaluation - description of program that has been done		
2942	Weber, Palmer, Ch	2014	Journal Article	Review of Literature - primarily drawn from the literature		
3033	Alvaro, Brooks, Hai	2014	Journal Article	Research - original research in which the methods include data collection (including job ads) & analysis; generalizability to others		
3508	Ogburn	2014	Editorial (Feature	persuasive essay/article		
3835	Corrall, Kennan, Af	2014	Journal Article	Research - original research in which the methods include data collection (including job ads) & analysis; generalizability to others		
4069	Stanton, Kim, Oakl	2014	Journal Article	Research - original research in which the methods include data collection (including job ads) & analysis; generalizability to others		
4091	Newton, Miller, Bra	2014	Journal Article	Program Description with/without Evaluation - description of program that has been done		
4209	Case	2014	Journal Article	Review of Literature - primarily drawn from the literature		
4352	Downs	2014	Journal Article	Program Description with/without Evaluation - description of program that has been done		
4925	Gore	2014	Editorial (Feature	Commentary - primarily drawn from authors' experience/knowledge (very few citations)		
5038	Bracke	2014	Journal Article	Program Description with/without Evaluation - description of program that has been done		
5373	Ramirez	2014	Editorial (Feature	Commentary - primarily drawn from authors' experience/knowledge (very few citations)		
5805	Allard, Mack, Feltn	2014	Journal Article	Research - original research in which the methods include data collection (including job ads) & analysis; generalizability to others		
5830	Huwe	2014	Editorial (Feature	Commentary - primarily drawn from authors' experience/knowledge (very few citations)		
7009	Leidig	2014	Dissertation/The	Research - original research in which the methods include data collection (including job ads) & analysis; generalizability to others		
7334	Nelson	2014	Conference - Pa	Case Study		
11260	Hunter	2014	Conference - Pa	Program Description with/without Evaluation - description of program that has been done		
17748	Witt	2014 included refs	Journal Article	Program Description with/without Evaluation - description of program that has been done		
17750	Steinhart	2014 included refs	Journal Article	Program Description with/without Evaluation - description of program that has been done		
17756	Heidorn, Palmer, W	2014 included refs	Journal Article	Review of Literature - primarily drawn from the literature		
17768	Heidorn	2014 included refs	Journal Article	Review of Literature - primarily drawn from the literature		

#C

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*Creation of international systematic review collaborations on topics in library and information science has been challenging but a great learning experience and a great tool for evidence based decision making in any library type setting.*

*Crafting a Narrative for Action:  
Assessment, Scholarly  
Communication, and Collection  
Management*



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**THANK YOU**

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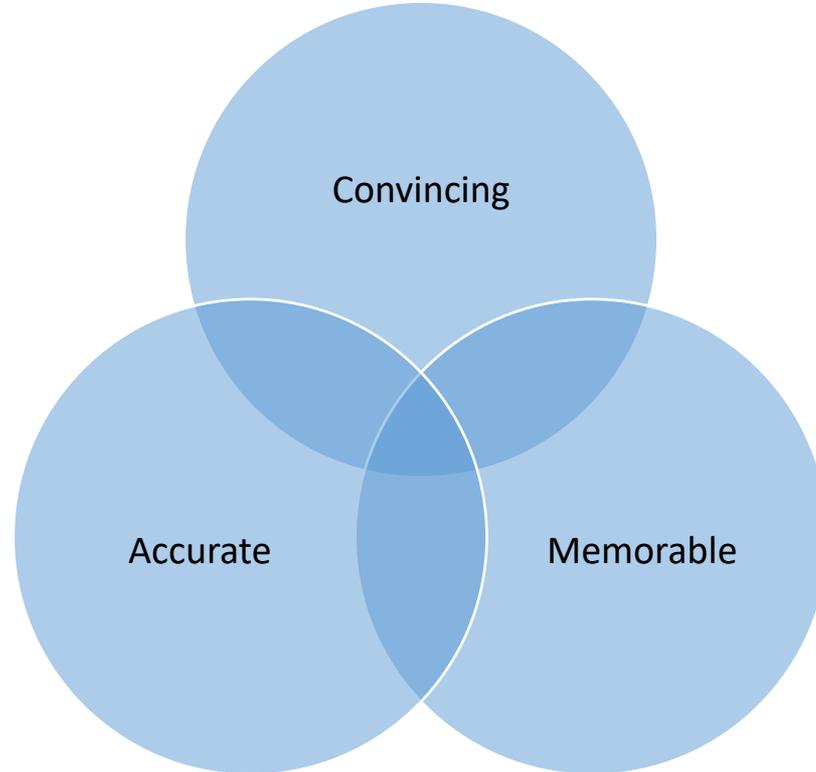
# The Issue(s)

- We have a complex problem which needs action
- We need to communicate that problem in order to work towards solutions
- We need to be able to tell various stakeholders the same story in a way that is accurate, convincing, and memorable.

# The Challenge

***What are the elements needed to create the narrative that you need?***

# My Story Challenge



# Who? Identify stakeholders

- Hierarchical Channels: Go up the chain
- Collaborate: Find Partners
- Grassroots: Build demand

# Stakeholders = Audience! Now what?

Identify the ways in which stakeholders might *relate* to the topic, and possible areas they may prove to be unsympathetic



# Telling Stories with Evidence (Data)

Once you've identified your audience, you need to ask yourself

What kind of story do you want to tell?

# The Enigma code



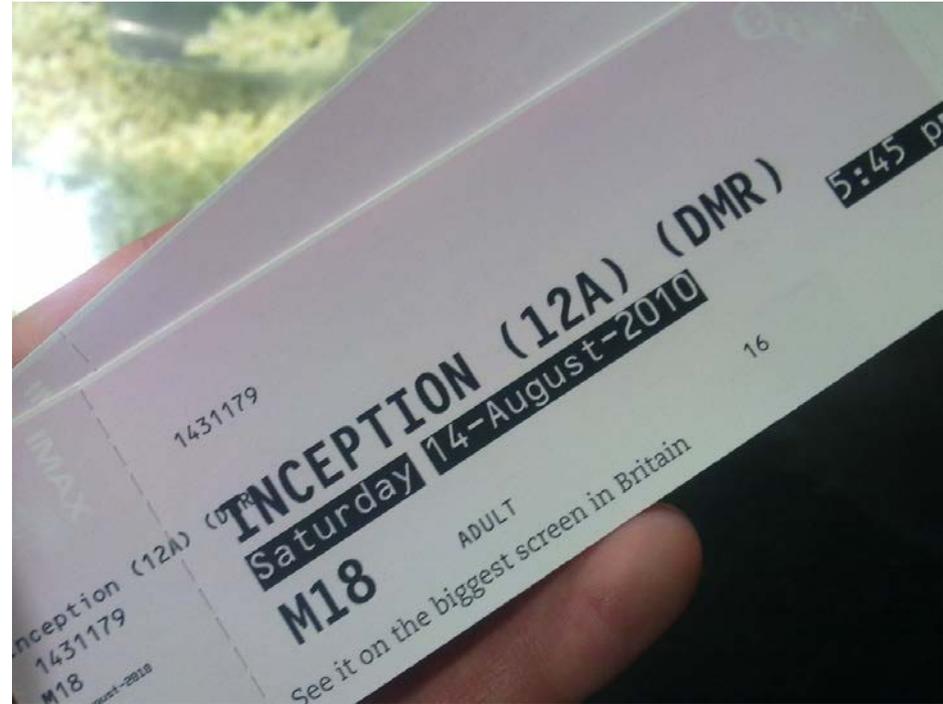
# Doing more than anticipating the questions

- Every good pitch anticipates the questions, tests the argument(s) and the receptions of possible outcomes

## **(Assessment!)**

- Anticipating possible questions is good, but a story that will be convincing will create the very questions that you wish to address.

## **(Scholarly Communication!)**



# After the telling: dealing with adversity

- Listening: acknowledging and recognizing stakes (and passion)
- It's not about you (getting beyond the bombs being thrown)
- Moving beyond the rejection of the premise
- Co-opt the “invent and solve” impulse for increased and ongoing engagement

# Next steps: “A narrative for ACTION”

- Offer scenarios for the future when appropriate
- Demonstrate that you are a place for action, and that they will hear more from you
- Implant the idea that when future questions or opportunities arise, you are the place to ask



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# THANK YOU

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**OTHER IMAGES USED**

Paurian "The Detective"

<https://www.flickr.com/photos/paurian/3550755709/>

whatleydude "Hurrah! at Last!"

<https://www.flickr.com/photos/paurian/3550755709/>