

**Loyola Marymount University**

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**From the Selected Works of Kristine R. Brancolini**

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September 16, 2009

# Use and Usability in Digital Library Development

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Available at: [https://works.bepress.com/kristine\\_brancolini/9/](https://works.bepress.com/kristine_brancolini/9/)

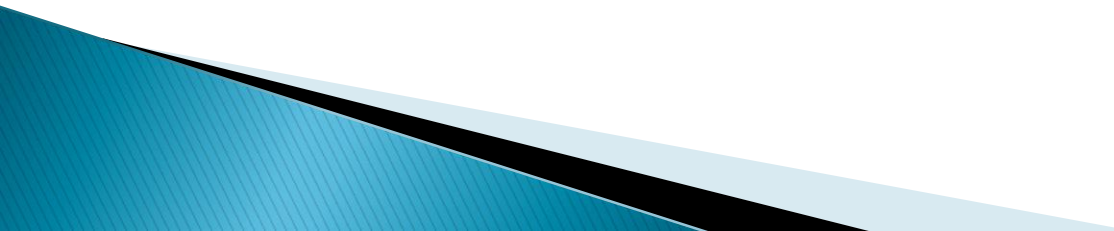
# Use and Usability in Digital Library Development

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OCLC Digital Forum West – Getty Research Center  
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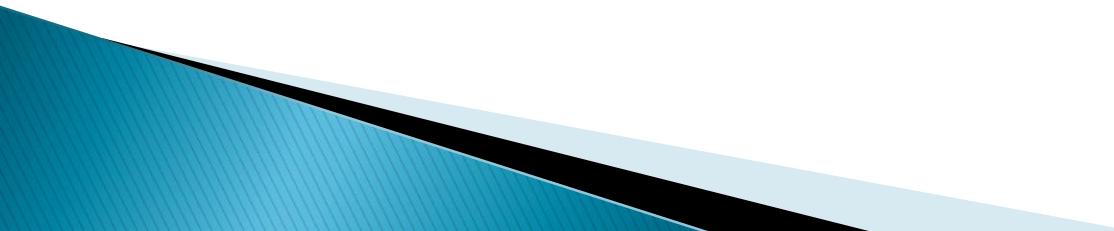
# Acknowledgements

- ▶ Michelle Dalmau, Digital Projects and Usability Librarian, Digital Library Program, Indiana University
- ▶ Jenn Riley, Metadata Librarian, Digital Library Program, Indiana University
- ▶ Digital Library Program website:
  - [www.dlib.indiana.edu](http://www.dlib.indiana.edu)

# Focus on Users

- ▶ Cannot digitize everything in the collections, so usually consider heavily-used collections for digitization.
  - ▶ Once a collection or specific items are selected for digitization, the next questions is usually, “What about the metadata?”
  - ▶ In considering how to enhance or create metadata, many options.
  - ▶ Look to use of collections/items and potential use for guidance in metadata plans.
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# Indiana University Experience

- ▶ Digital Library Program established in November 1997
  - ▶ Built on early digital library development in three areas:
    - Digital music library -- Variations
    - Electronic text – Victorian Women Writers
    - Digital art images – DIDO
  - ▶ Began seeking grants from the beginning
  - ▶ Many grant funders required use and usability work:
    - Does project serve an identified need?
    - Does it function as promised?
  - ▶ Created position for a use and usability specialist
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# Case study: Sheet Music

- ▶ Indiana University's Lilly Library had two collections of sheet music, Sam DeVincent and Starr.
- ▶ Sam DeVincent Collection of American Sheet Music
  - 24,000 pieces of sheet music, songbooks, and folios, acquired in 1998.
  - In 1988 DeVincent donated a large portion of his collection to the Smithsonian Institution's National Museum of American History.
  - Lilly collection contains duplicates of some of the pieces in the Smithsonian collection additional materials DeVincent subsequently acquired.
  - Arranged by collector: personal names of musicians or performers or on subjects he defined that were as diverse as the American Red Cross and Halloween
  - Created an in-house database.

## ▶ Starr Sheet Music Collection

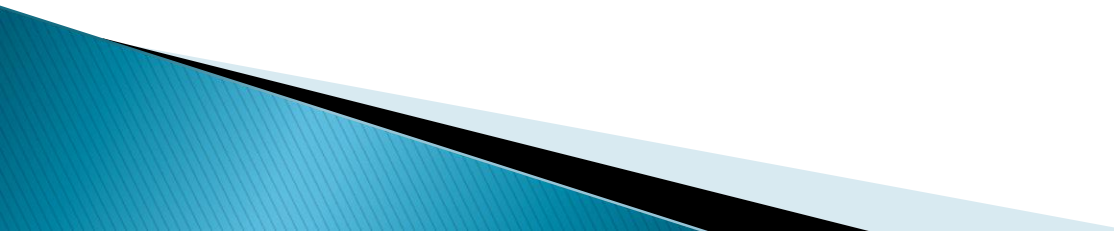
- More than 100,000 pieces of sheet music arranged in three categories.
  - composers, lyricists, performers, and literary figures
  - subjects and types of music
  - chronological miscellany
- Primarily a collection of American popular music, which extends from the late eighteenth century through the 1950's.
- No database listing items in this collection.
- No written record of all titles in any given category.

# Descriptive Metadata

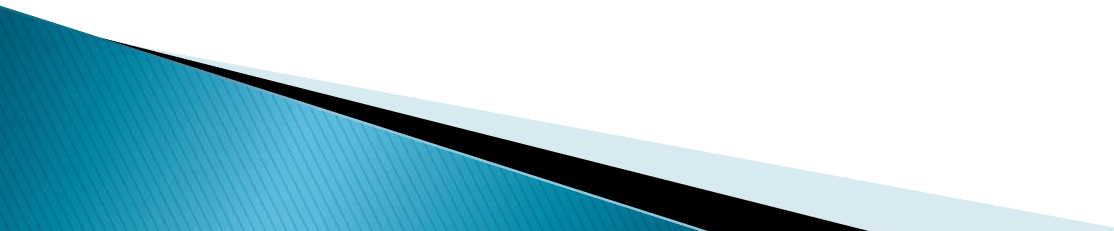
- ▶ Lilly cataloger had done early work to develop a MARC record for sheet music, but it was never officially adopted.
    - About 500 pieces from the Starr Collection were cataloged experimentally and added to the library's online catalog.
  - ▶ DeVincent database was useful in-house but did not adhere to standards; no authority control.
  - ▶ Union catalog of historical sheet music seemed like a good idea, but what about cataloging and metadata?
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# Sheet Music Consortium

- ▶ Four universities with substantial sheet music collections met in 2001 to begin discussing a union catalog for sheet music.
  - ▶ Meeting for all interested parties at IU in 2002.
  - ▶ Production site launched in 2003.
  - ▶ Not just for online sheet music.
  - ▶ Provides an aggregated search, then sends the user back to the home institution for access.
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# Same question: Metadata?

- ▶ Intention from the beginning to respond to user needs.
  - ▶ Faculty users of Lilly sheet music collections were invited to 2002 meeting.
  - ▶ Uses are varied.
    - Study of musical content, lyrics, cover art, and advertisements
    - Performance
  - ▶ Asked how they would like to search.
    - Scholars had different needs from performers.
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# Consortium Metadata

- ▶ OAI-PMH for harvesting metadata
- ▶ Harvested data in the 15 fields of unqualified Dublin Core: Title, Creator, Subject, Description, Publisher, Contributor, Date, Type, Format, Identifier, Source, Language, Relation, Coverage, Rights.
- ▶ Some participants worried about usefulness of these fields and added labels to aid discovery:
  - Creators : Keates, Henri A. [lyricist]
    - Robinson, Harry I. [lyricist]
    - Robinson, Louis [lyricist]
    - Keates, Henri A. [composer]
    - Robinson, Harry I. [composer]
    - Robinson, Louis [composer]
    - Fred Waring [performer]
- ▶ These labels came from discussions with users regarding the importance of differentiating roles

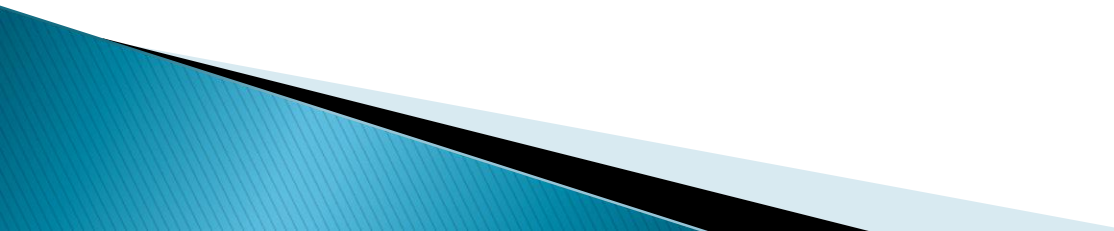
# Project Website

- ▶ Knew that the key to providing users with a useful resource would be what data providers did with their native metadata.
- ▶ Significant variety in quality and quantity of metadata
- ▶ Website\* offers guidelines for mapping metadata to Dublin Core, including answers to questions and examples

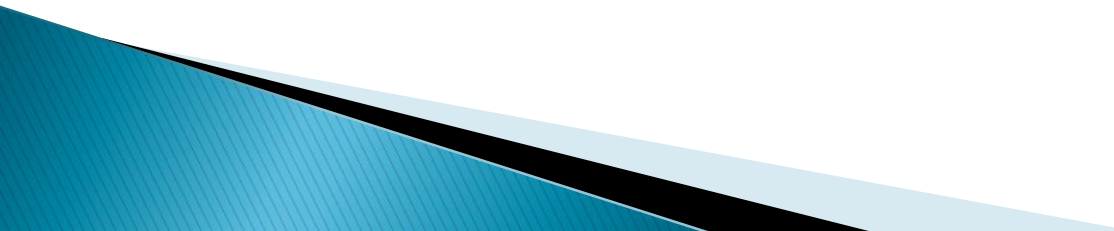
\*<http://digital.library.ucla.edu/sheetmusic/OAIProject.html>




# Lessons Learned

- ▶ We realized that we needed more systematic ways to gather input from users regarding their search and discovery needs.
  - ▶ The Sheet Music Consortium helped us realize that early online sheet music collections use customized metadata models.
    - Many similarities
    - Many differences
  - ▶ Next sheet music project would build upon lessons learned from Sheet Music Consortium (SMC).
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# IN Harmony: Sheet Music from Indiana

- ▶ In 2004 IMLS-funded project to digitize and create metadata for 10,000 pieces of sheet music from four diverse partners:
    - Indiana University Lilly Library
    - Indiana State Library
    - Indiana State Museum
    - Indiana Historical Society
  - ▶ Goals included creating
    - standards-based images that could be used to print and perform; and
    - rich, interoperable metadata, responsive to user needs.
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# Importance of User-centered Metadata

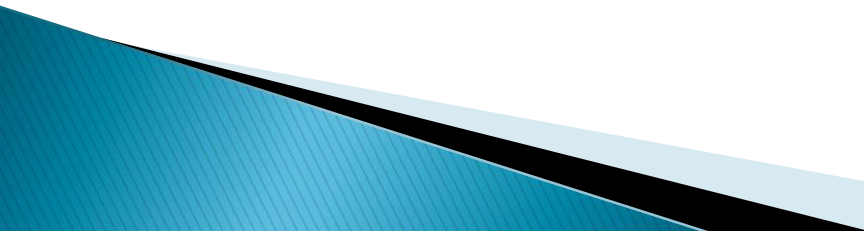
- ▶ Users are limited by the search options provided by the specific institution or resource; how would they like to search?
  - ▶ Experts are one source of information but users themselves are key to answering this question.
  - ▶ SMC experience and research revealed:
    - Users of sheet music have unique discovery needs, especially with regard to subject access.
    - Uses do not approach subject access in a uniform or predictable way.
    - Subject searches typically include topic, form, genre, style, and geographic terms.
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# User Studies

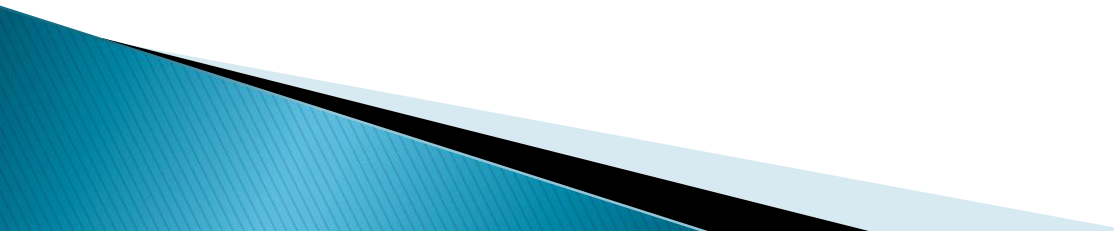
- ▶ Built into the project from the earliest stages
- ▶ Four major user studies
  - Query logs analysis
  - Card sort
  - Task scenario
  - Email content analysis
- ▶ Purpose was to inform the design of the metadata model, the sheet music cataloging tool and the collection web site.



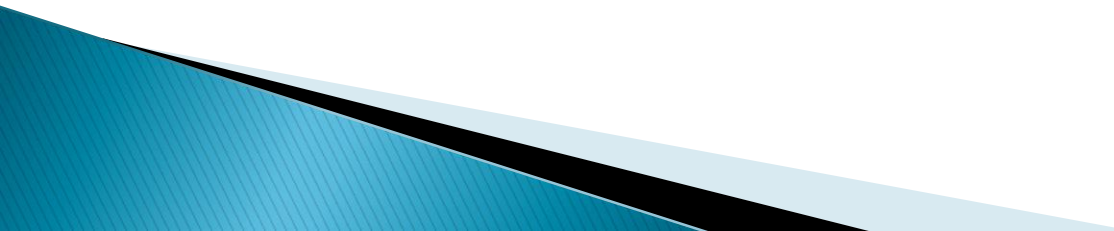
# Query Logs Analysis Study

- ▶ Conducted to assess actual user queries and discovery patterns.
  - ▶ Derived from server logs generated by two online sheet music websites, Sheet Music Consortium and the Indiana University Sheet Music Collection.
  - ▶ IU Sheet Music Collection comprised of homogeneous metadata described by custom fields.
  - ▶ Designed to learn what type of searches users perform, how often they conduct known-item vs. unknown-item searches, what kinds of searches users conduct (topical, genre, etc.).
  - ▶ Learned that known-item searches predominate, but among subject searches most common types are genre/form/style, topic, and instrumentation.
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# Card Sort

- ▶ Designed to understand how representative users approach subject-related discovery.
  - ▶ Built upon query logs analysis by using actual queries harvested for card sort concepts.
  - ▶ Also tested their own categorical constructs of subject against the users' construct.
  - ▶ Nine users of online sheet music grouped 55 pre-defined concepts and assigned category names to their groupings.
  - ▶ Revealed that structured metadata is essential to aiding discovery.
  - ▶ Cross-relationships were judged important by participants for access.
  - ▶ Confirmed research finding that it is difficult to distinguish among genre, form, and style.
  - ▶ Influenced modular metadata structure that could support flexible discovery mechanisms in the end-user interface.
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# Task Scenario Study

- ▶ Designed to further examine subject-related access.
  - ▶ Compared user-provided terms with user-selected descriptors from pre-identified controlled vocabularies.
  - ▶ Tasks designed to determine which, if any, controlled vocabularies best match participants' natural language and search strategies.
  - ▶ None of the vocabularies emerged clearly as most appropriate for describing sheet music.
  - ▶ Results reinforced design of modular metadata model to accommodate multi-faceted access to sheet music.
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# Email Content Analysis Study

- ▶ Content analysis of ~50 emails about sheet music sent to the Lilly Library.
- ▶ This method calls for a systematic deconstruction of email content based on a predefined set of objectives:
  - Content
  - Search and retrieval strategy
  - User profile
- ▶ Resulted in twelve, pre-defined specific coding categories for each of the above objectives; assigned to each email query (as appropriate) based on a set of coding guidelines.
- ▶ Reinforced findings from other studies: prevalence of known-item searching, multi-faceted queries comprised of two categories (e.g., war marches), and users' conception of title extending to first line of song or chorus.

# Conclusions

- ▶ The two sheet music projects offer insights into the need to work closely with users in designing metadata for digitization projects.
  - ▶ Specific findings are less important than use of multiple methodologies to assess user needs.
  - ▶ Digitization is too costly and complex to proceed in without user input; those users may be few in number but must be representative.
  - ▶ Use and usability testing is expensive but essential to project success.
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