

2018-03-14

# Challenges and Opportunities in Customizing Library Repository User Interfaces

Vacek, Rachel

<https://hdl.handle.net/2027.42/142785>

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*Downloaded from Deep Blue, University of Michigan's institutional repository*

# Challenges and Opportunities in Customizing Library Repository User Interfaces

Rachel Vacek, Head of Design & Discovery,  
University of Michigan

Library As Publisher, Part Two:  
UX and UI for the Library's Digital Collections  
March 14, 2018



**Hi! I'm Rachel.**

**I'm passionate  
about improving  
the user experience  
across our  
web presence.**

# Outline

Comparing Repositories

Challenges Impacting Repository UI

Opportunities for Improving Repository UI

Recap

# Comparing Repositories

# Comparing repository features and user interfaces

## Out-of-the-Box Repositories

### Advantages

- “Ready” to go after installation
- Customer support exists
- Discovery included
- Some handle 1 format type, but do it fairly well

### Disadvantages

- Limited APIs
- Typically poor user interfaces
- Not scalable or extensible

## Open Source Repositories

### Advantages

- Modular design through APIs
- Large development communities
- Scalable, sustainable, and extensible
- Handle any file format

### Disadvantages

- Steep learning curve
- Might need additional tools for discovery

# So many content types / formats

- Images
- Maps
- Text
- Articles
- Ebooks
- Dictionaries
- Papyrus
- Video
- Audio
- Theses and Dissertations
- Newspapers
- Finding Aids
- Bibliographic Materials
- Scrolls
- Data
- So many more...

# Challenges Impacting Repository UI



# Driving forces in digital scholarship

- Growing demand of digitized primary sources
- Researcher collaboration changes rapidly
- Lots of uncertainty and ambiguity around:
  - What future services might look like, and what tools are needed to support those services
  - Federal and state funding for grants, budgets, projects
- Longstanding norms in the library profession around privacy are being challenged

# Driving forces in digital scholarship, cont.

- An increase in researchers' potential audience
- Standards for scholars to be considered successful are evolving
  - Altmetrics, publication practices, public engagement, non-monograph projects, etc.
- Researchers want easy connections to other related resources

**#FOMO**

“Research tools need to be flexible enough so it ultimately does not matter whether historians access materials online or in person... it will become essential that they can seamlessly integrate tools for organizing, annotating, and analyzing primary source materials into their workflows.”

Alexandra Chassanoff, "Historians and the Use of Primary Source Materials in the Digital Age," *American Archivist* 76, no. 2 (2013): 472.



Alexandra Chassanoff,  
University of North  
Carolina, Chapel Hill



## Supporting the Changing Research Practices of Historians

Jennifer Rumer  
Roger C. Schonfeld



December 10, 2012

“Historians ... would like to have full text search of digitized books, archival finding aids, and non-textual sources ... as comprehensively as possible through their main discovery services. They would also like to have services that help them not only find some items in [response] to their query, but to ensure that they have been comprehensive in their research on a given topic.”

Jennifer Rumer and Roger C. Schonfeld, (2012) “Supporting the Changing Research Practices of Historians: Final Report from ITHAKA S+R”: 43.

# Archival context implies hierarchy

Archivists' need  
for accuracy  
vs.  
User needs and  
expectations



# Changes in platforms and tools

- DSpace
- CONTENTdm
- Greenstone
- Omeka
- Fedora
- ~~Hydra~~ Samvera
- Islandora
- Rosetta
- bePress
- Digital Commons
- Spotlight
- CollectionSpace
- Fulcrum
- Avalon
- Blacklight
- IIF
- So many more...

# “Old” digital collections

- The older the repository (repositories), the more complicated it is to keep the interfaces current, usable, and consistent
- Michigan’s digital library platform (DLXS) was created over 20 years
  - Focus was on being a production service to create digital collections
- Today, people have higher expectations of systems
  - Shouldn’t need training on how to use or navigate the interface - it should be intuitive and familiar
- Sometimes collections had more items added, but most became stagnant - the interfaces were never updated
- Challenges in migrating old content *and features* to a new system

## Find a collection:

Start typing to see only collections containing these items.

### Browse by Title

### Filter by Format

- Bibliographic Collections (13)
- Finding Aid Collections (8)
- Image Collections (107)
- Text Collections (164)

### Filter By Access

- Public (241)
- Restricted (51)

### Filter by Sponsor

- Digital Library Production Service (176)
- Humanities Text Initiative (26)
- MPublishing (90)

### Filter by Top Subject

- Arts (48)
- Business (1)
- Engineering (10)
- General Information Sources (138)
- Government, Politics & Law (18)
- Health Sciences (11)
- Humanities (168)
- International Studies (48)
- News & Current Events (6)

## 292 Collections



### 20th Century American Poetry

This database contains modern and contemporary American poetry from the early twentieth century to the present. It includes the works of most major poets of the twentieth century, beginning with the traditionalists, continuing through the American modernists represented by such poets as Wallace Stevens, and moving onward to the contemporary poetry of America's 1990s. The broad coverage of Twentieth-Century American Poetry includes collected works and individual volumes of poetry from all of the major movements and schools of twentieth-century American poetry, including modernism, the New York School, the Chicago School, the Southern School, the Confessionals, the Beats and the Black Mountain poets.

**Format:** Text Collections

**Access:** restricted

**Search within group:** [Poetry](#) and [University of Michigan Licensed Text Collections](#)

**Sponsor:** Digital Library Production Service

**Statistics Detail:** [statistics detail](#)



### Abraham Lincoln Association Serials

Between 1940 and 1952, the Abraham Lincoln Association published fifty-two issues of The Abraham Lincoln Quarterly, a journal with original articles regarding all facets of Abraham Lincoln's life and the world in which he lived. This database contains all of the issues of The Abraham Lincoln Quarterly.

**Format:** Text Collections

**Access:** public

**Search within group:** [Abraham Lincoln Association Publications](#)

**Sponsor:** Digital Library Production Service

**Statistics Detail:** [statistics detail](#)



### ACLS Humanities E-Book

Humanities E-Book is a digital collection of over 4,400 titles offered by the ACLS in collaboration with nineteen learned societies, nearly 100 contributing publishers, and librarians with Michigan Publishing at the University of Michigan Library. The result is an online, fully searchable collection of high-quality books in the Humanities, recommended and reviewed by scholars and featuring unlimited multi-user access and free, downloadable MARC records. HEB is available 24/7 on- and off-campus through standard web browsers.

**Format:** Text Collections

<https://quod.lib.umich.edu/lib/collist/>



## Database of Twentieth Century American Poetry (AMPO20)

This database contains modern and contemporary American poetry from the early twentieth century to the present. It includes the works of most major poets of the twentieth century, beginning with the traditionalists, continuing through the American modernists represented by such poets as Wallace Stevens, and moving onward to the contemporary poetry of America's 1990s. The broad coverage of Twentieth-Century American Poetry includes collected works and individual volumes of poetry from all of the major movements and schools of twentieth-century American poetry, including modernism, the New York School, the Chicago School, the Southern School, the Confessionals, the Beats and the Black Mountain poets.

- **Simple Searches:** Single word and phrase searches throughout the entire AMPO20.
- **Proximity Searches:** Find the co-occurrence of two or three words or phrases.
- **Boolean Searches:** Find combinations of two or three words in a given paragraph or
- **Word Index:** Browse through lists of all unique words in the texts.
- **Citation Searches:** Identify works by author and title.
- **Browse:** Browse works by author and title.
- **About the AMPO20:** AMPO20 editorial policy, access restrictions, lists of authors, e

### UMDL Help

Last content update April 7, 2000.

Example of a digital collection homepage and one of its search pages within the University of Michigan Digital Collections.

UMDL Texts home | You are logged in as: rvacek | [Logout](#)  
Your bookbag has 0 items

### 20th Century American Poetry

[Home](#) [Search](#) [Browse](#) [Bookbag](#) [Help](#)

#### Basic Search

Basic Search [Boolean](#) [Proximity](#) [Bibliographic](#) [Word Index](#) [History](#)

Search in:

Find:

**Tip :** work\* finds "worker," "working," etc.  
war and peace finds "war and peace"

[More tips](#)

Limit to:  in

and  in

Restrict to gender:

Powered by [DLXS](#)  
To comment or inquire about content, contact [UMDL Help](#)  
To report errors, contact [DLPS Help](#)

## Advanced Papyrological Information System (APIS UM)




 Search 
 has digital media

Example of a more modern interface of a digital collection homepage within the University of Michigan Digital Collections.

### BROWSE

[Sample media](#)
[Sample records](#)
[Newest additions and updates](#)

### BROWSE BY TOPIC

[Subject Headings](#)

### COLLECTION ACCESS

[23019](#)
[images/descriptions](#) are openly available.

[3120 images](#) are restricted; descriptions are openly available.


APIS (Advanced Papyrological Information System) at the University of Michigan is a “virtual library” that provides online access to our papyrological collection. Users are able to view digital images and detailed catalog records containing information on papyrus characteristics, corrections to published papyri, and republications.

APIS, funded in part by the [National Endowment for the Humanities](#), grew from the digitization of papyrus collections from a consortium of universities, including Columbia, Duke, Yale, and Michigan in the early '90s, overseen by the [American Society of Papyrologists](#). Though the APIS project no longer continues, the images and metadata created from this joint project are still maintained by the institutions involved and are available through [Papyri.info](#). The University of Michigan Library continues to digitize papyri in our collection and add to the records available in our database.

- [Copyright Policies](#)
- [Technical Specifications](#) (including Database Template and DTD)
- [The University of Michigan Papyrology Collection](#)
- [How to Find and Access Items](#)

“...systems should be easy to learn, tolerant of errors, flexible, adaptable, and appropriate and effective for the task.”

Christine L. Borgman, "Designing Digital Libraries for Usability," in *Digital Library Use: Social Practice in Design and Evaluation*, eds. Ann Peterson Bishop, Nancy A. Van House, and Barbara P. Buttenfield (Cambridge, Mass.: MIT Press, 2003): 109.



Christine Borgman,  
University of California,  
Los Angeles

# “Large” digital collections

- Similarly, the bigger the repository (repositories) the more complicated it is to keep the interfaces current, usable, and consistent
- Hard to communicate size and scope to users through the interface
- Perhaps visualizations could help explain large amounts of data (collections, records, formats) to our users
- Discovery across collections is more challenging



# Collections sizes at Michigan

	<b>Collections</b>	<b>Records</b>
<b>Images</b>	107	1,490,236
<b>Text</b>	164	37,045,804
<b>Finding Aids</b>	8	6,338
<b>Bibliographic &amp; Reference Collections</b>	13	4,197,968
<b>Total</b>	<b>292</b>	<b>42,740,346</b>

<https://www.lib.umich.edu/digital-library-platform-services-dlps/view-usage-size-statistics> (updated daily)

# Back to talking about format again...

- Images
- Maps
- Text
- Articles
- Ebooks
- Dictionaries
- Papyrus
- Video
- Audio
- Theses and Dissertations
- Newspapers
- Finding Aids
- Bibliographic Materials
- Scrolls
- Data
- So many more...

# Opportunities for Improving Repository UI

# Increase in UX support and user research

- Libraries are paying more attention to users' motivations
  - Data-driven research and learning analytics
  - Assessment and demonstrating impact
- More UX librarians and UX departments are showing up in libraries
  - Support user research and usability on website and digital library projects → expanding to all applications integrated across a library's web presence
  - Bring consistency and universal design principles to interfaces
  - Improve accessibility





“[Researchers] were frustrated by the lack of general uniformity of interface presentation related to search, both across types of materials and across databases. One researcher was bothered by a lack of standardization in presentation due to content being aggregated for multiple sources, noting that the variation can be disorienting.”



Jody DeRidder,  
University of Alabama

Jody L. DeRidder and Kathryn G. Matheny, (2014) “What Do Researchers Need? Feedback On Use of Online Primary Source Materials”, D-Lib Magazine, Vol 20 Number: 7/8, <http://www.dlib.org/dlib/july14/deridder/07deridder.html>

# Search and discovery is improving

- Library discovery systems are providing more open tools and APIs, enabling libraries to customize or personalize their search experience for users
- Algorithms in search engines are becoming smarter, more intuitive, and feature rich
- Tools like Blacklight, a discovery platform framework, let libraries customize discovery interfaces
- More opportunities to improve discoverability across related items and collections





Roger Schonfeld, ITHAKA  
S+R

“...it is still necessary for historians to locate each collection independently. This lack of collocation and collection presents efficiency challenges and deepens scholars’ concerns about comprehensiveness. The anxiety over “missing something” was quite common across interviews, and historians often attributed this to the lack of comprehensive search tools for primary sources.”

Jennifer Rumer and Roger C. Schonfeld, (2012) “Supporting the Changing Research Practices of Historians: Final Report from ITHAKA S+R”: 16.

# Increase in cross-institutional partnerships

Just a few examples...



Indiana University,  
Northwestern University



International  
Image  
Interoperability  
Framework

Over 40 founding members



Stanford University,  
University of Virginia,  
So many more...



blacklight

University of Virginia  
So many more...

IF YOU WANT TO GO FAST, GO ALONE.

IF YOU WANT TO GO FAR, GO TOGETHER.

- African Proverb



“We need more user testing like this, especially from an accessibility standpoint, so we can build Sufia to be user friendly to implement and use.”

Mike Giarlo, in an email to Ben Howell, a University of Michigan Library’s User Experience and Accessibility Specialist, about his usability testing of an early version of Deep Blue Data with students and staff with disabilities



Mike Giarlo,  
Stanford University,  
works with Sufia, a  
Samvera-based  
repository front-end

# Extensibility and providing just enough customization

*How far should libraries should go in providing customizations to meet both stakeholder and user needs?*

- Focus UI development on major user features that won't go away anytime soon
- Build solutions that are flexible so systems and their components can evolve at different rates
  - This lets interfaces be more flexible and able to be changed more frequently in response to researcher's needs
- Consider using format specific repositories to have more UI customizations
- Keep in mind the constraints on your environment



John Weise,  
University of Michigan

“Repositories need to be modular and extensible. We said these things years ago, but today there are different ways to achieve it. Applications need to be more adaptable and not constrained by system architecture unnecessarily.”

Personal interview with John Weise, Head of Digital Library Applications, University of Michigan Library, March 12, 2018.





Deep Blue Data is a repository offered by the University of Michigan Library that provides access and preservation services for digital research data that were developed or used in the support of research activities at U-M.

[Q Browse](#)[🕒 Deposit Your Work](#)

## Featured Works

The Observation and

<https://deepblue.lib.umich.edu/data/>

# Fishrappr

- Browser for newspaper archives
- Available at <https://github.com/mlibrary/fishrappr>
- Developed for a particular project, but built so it can potentially be used for additional newspaper repositories



Fishrappr Logo



# The Michigan Daily

## Digital Archives

1890 - 2014

The student newspaper at the University of Michigan

125 years of editorial freedom

About The Michigan Daily

Search

Any Date

↕ For

Search Anything

🔍 Search

<https://digital.bentley.umich.edu/midaily>



# Recap

# Recap

- Challenges in customizing user interfaces still exist and will continue to exist, but more solutions are being created and explored everyday
  - Better tools and platforms
  - Enhanced discovery
  - Growing interest in UX
  - Community sourced development projects
- It's important to find balance between meeting user needs and meeting the needs of your environment
- Building tools that are extensive is critical to keeping your UI adaptable with rapid changes

# Resources

Ali Shiri, (2003) "Digital library research: current developments and trends", Library Review, Vol. 52 Issue: 5, pp.198-202, <https://doi-org.proxy.lib.umich.edu/10.1108/00242530310476689>

Harriett E. Green, Patricia Lampron, (2017) "User Engagement with Digital Archives for Research and Teaching: A Case Study of Emblematica Online", Libraries and the Academy, Vol. 17 Number 4, pp. 759-775, <https://doi.org/10.1353/pla.2017.0045>

Paul Alonso Gaona-García, David Martin-Moncunill, Carlos Enrique Montenegro-Marin, (2017) "Trends and challenges of visual search interfaces in digital libraries and repositories", The Electronic Library, Vol. 35 Issue: 1, pp. 69-98, <https://doi.org/10.1108/EL-03-2015-0046>

Jody L. DeRidder and Kathryn G. Matheny, (2014) "What Do Researchers Need? Feedback On Use of Online Primary Source Materials", D-Lib Magazine, Vol 20 Number: 7/8, <http://www.dlib.org/dlib/july14/deridder/07deridder.html>

Jennifer Rumer and Roger C. Schonfeld, (2012) "Supporting the Changing Research Practices of Historians: Final Report from ITHAKA S+R", <http://www.sr.ithaka.org/sites/default/files/reports/supporting-the-changing-research-practices-of-historians.pdf>

NISO Framework Working Group with support from the Institute of Museum and Library Services, A Framework of Guidance for Building Good Digital Collections (Baltimore, MD: National Information Standards Organization (NISO), 2007).

# Resources, cont.

Christine L Borgman. "Designing digital libraries for usability", Cambridge, MA, Digital Library Use: Social Practice in Design and Evaluation (2003).

Georgios Gkoumas, Fotis Lazarinis, (2015) "Evaluation and usage scenarios of open source digital library and collection management tools", Program, Vol. 49 Issue: 3, pp. 226-241, <https://doi.org/10.1108/PROG-09-2014-0070>

Dion Hoe-Lian Goh, Alton Chua, Davina Anqi Khoo, Emily Boon-Hui Khoo, Eric Bok-Tong Mak, Maple Wen-Min Ng, (2006) "A checklist for evaluating open source digital library software", Online Information Review, Vol. 30 Issue: 4, pp. 360-379, <https://doi.org/10.1108/14684520610686283>

Jennifer L. Marill and Edward C. Luczak, (May 2009) "Evaluation of Digital Repository Software at the National Library of Medicine," D-Lib Magazine, Vol. 15 Number: 5/6, <http://www.dlib.org/dlib/may09/marill/05marill.html>

Annie Wu, Santi Thompson, Rachel Vacek, Sean Watkins, and Andrew Weidner, (2016) "Hitting the Road Towards a Greater Digital Destination: Evaluating and Testing DAMS at University of Houston Libraries", Information Technology and Libraries, Vol. 35 Number: 2, <https://doi.org/10.6017/ital.v35i2.9152>

Thank you!

Questions? Contact me!

[rvacek@umich.edu](mailto:rvacek@umich.edu)