

**Kent State University**

---

**From the Selected Works of Virginia A Dressler**

---

October, 2014

# Applying concepts of Linked Data to local digital collections to enhance access and searchability

Virginia A Dressler, *Kent State University*



Available at: [https://works.bepress.com/virginia\\_dressler/5/](https://works.bepress.com/virginia_dressler/5/)

## **Best Practice Poster: Applying Concepts of Linked Data to Local Digital Collections to Enhance Access and Searchability**

Virginia Dressler  
Kent State University, USA  
vdressle@kent.edu

**Keywords:** Digital collections; Fedora; Hydra; RDF; Linked Data; Locally defined metadata

### **Abstract**

Plans are currently underway at the Kent State University Library to migrate digital objects into a different content management system to address the needs of growing collections. The plan will involve shifting to a framework to enhance all current digital collections, as well as anticipating the growth of future projects and formats. The poster will touch in particular on the topic of enhancing search capabilities in this new framework, through use of a single, cross-collection searchable index and also discuss the benefits of applying Linked Data concepts. Two current digital collections that will be highlighted and discussed in the poster are the May 4 Digital Archive and the KSU Shootings Oral Histories<sup>1</sup>.

The collections currently online can only be searched individually through a homegrown application and interface. Users who are not aware of the individual search feature may unknowingly be excluding related content from other collections. For example, an oral history contained in one digital collection may overlap with many similar subject terms, names and places in another digital collection, in particular a similarly themed collections such as the May 4 Digital Archive and May 4 Oral Histories. The migration of content into a different platform will enable cross-collection searching and also allow users to more easily find and discover related content. The current local solution for digital collections does not provide a single search mechanism that could be inadvertently hiding related content through this set-up. Further, this project will include the incorporation of using Open Archives Initiatives (OAI) protocol to further extend access and discovery beyond the department website.

The proposal for a new platform will include the plan to implement the open source content management system as the base of this project, the Fedora repository<sup>2</sup>. The plan is to use the upcoming release of Fedora 4 as the repository platform for the underlying storage and management piece, and another open source application, the Hydra Project<sup>3</sup>, for the interface component. Metadata from the existing collections will be mapped into a crosswalk that will be formatted into RDF from the SQL database. The resulting group of records will be searchable in a single search method, greatly improving search functionality. In addition, the switch to another format of metadata will also enable the capability of using linked data, as the newest release of Fedora is RDF native. The metadata records will also utilize OAI in the proposed solution, further opening the records into a broader scope and arena for discoverability.

Figure 1 illustrates a current item in the May 4 Digital Archive. The record uses extended Dublin Core elements, with an internally agreed upon vocabulary for the interface terminology. A keyword search of the photographer in the example from Figure 1 from the May 4 Digital Archive search interface for Chuck Ayers would not include a related item in the Oral History collection (as seen in Figure 2). In the current interface, the user would need to be aware to search

---

<sup>1</sup> Both digital collections are accessible from this site, <http://www.library.kent.edu/page/16454> [Accessed June 25, 2014]

<sup>2</sup> The Fedora Repository, <http://fedorarepository.org/> [Accessed July 5<sup>th</sup>, 2014]

<sup>3</sup> Hydra Project, <http://projecthydra.org/> [Accessed July 7<sup>th</sup>, 2014]

each digital collection separately, and may inadvertently leave out related results if they fail to search through multiple collections. The goal of the redesign is to create a platform and system that enable users to effortlessly and fluidly search throughout the entire repository and find related content more easily and readily than the current scenario allows. The goal of the project as we build up digital collections is to create a framework and platform that supports navigation and discovery in a seamless method and process to the user. In addition, we will open up our local collections by using linked data methods to create connections between content that may not have been apparent previously, which is exemplified in the records below.

Further, by utilizing the elements of linked data and the common and frequently used names, places and things defined in the records will create connections through the use of locally defined terms as well as Uniformed Resource Identifiers (URIs). For example, if a key figure from the shootings provides an oral history, the use of a given URI will create a system to associate all other material, such as photographs, film or any other related content that may be present throughout the other collections in the digital library. In the example provided in the poster, the name connected with both assets in the figures displayed here would be recalled in a basic search in the proposed platform and indexing method, which previously would have taken two separate searches within each collection interface in the existing framework. Furthermore, the full transcriptions of the oral histories are also not currently being searched, but would have the potential of being searched in the new system if included in the index.

The proposed platform and migration of existing collections into the proposed framework is important as the digital library continues to grow and include more content. This change will prove to be beneficial to users, in a higher search potential by including all content and additionally in the use of RDF and Linked Data underpinnings to further enhance and highlight the connections between digital objects.

Item ID:	1244
Description:	Trucks and jeeps in old stadium parking lot, 5/3, 10:00 AM
Author(s)/Photographer(s):	Ayers, Chuck
Location:	Kent (Ohio)
Date:	May 3, 1970
Subject(s):	Military vehicles, Ohio. Army National Guard
Format of Original:	print
Collection:	<a href="#">May 4 Collection</a>
Sub-collection:	<a href="#">Chuck Ayers photographs</a>
Institution:	Kent State University
Repository:	Special Collections and Archives
Rights:	This digital object is owned by Kent State University. Please include proper citation and credit for use of this item. Use in publications or productions is prohibited without written permission from Kent State University. Please contact the <a href="#">Department of Special Collections and Archives</a> for more information.
Full Duplication Policy:	<a href="http://www.library.kent.edu/page/14062">http://www.library.kent.edu/page/14062</a>

FIG. 1. Screenshot of Item #1244 from May 4 Digital Archive, one of several photographs that were taken by Chuck Ayers.

The screenshot shows a web interface for the KSU Oral Histories digital collection. At the top, there is a navigation bar with buttons for previous, next, and search. Below this is a 'Show Transcript' button. The main content area is a table with the following fields:

Narrator(s):	Ayers, Chuck (Charles W.)
Narrator's Role:	Student at Kent State University in 1970
Date of interview:	2007-08-16
Description:	A former editorial cartoonist for the Akron Beacon Journal, now one of the authors of the comic strip Crankshaft, Ayers relates his memories from when he was an undergraduate student at Kent State University from 1966-1971. Ayers interprets what happened on May 4, 1970, as well as events that occurred both leading up and following the shootings. He discusses several photographs he took on those early days in May, his role as an eyewitness for the Beacon Journal, and being interviewed by the FBI.
Length of interview:	132 minutes
Places discussed:	Akron (Ohio) Kent (Ohio)
Time period discussed:	1968-1974
Subjects:	Daily Kent Stater Demonstrations--Ohio--Kent Draft registration Fires--Ohio--Kent Kent State Shootings, Kent, Ohio, 1970 Kent State Shootings, Kent, Ohio, 1970--Photographs Kent State University. ROTC Building--Fires Miller, Jeffrey, d. 1970 Nixon, Richard M. (Richard Milhous), 1913-1994--Impeachment Ohio. Army National Guard Photojournalism Post-traumatic stress disorder Rhodes, James A. (James Allen), 1909-2001 Roadblocks (Police methods)--Ohio--Portage County Search-lights Seiberling, John F. Students--Ohio--Kent--Interviews Tear gas munitions United States. Congress. House. Committee on the Judiciary University of Akron

FIG. 2. A screenshot of the oral history from Chuck Ayers in the KSU Oral Histories digital collection

## Acknowledgements

I would like to acknowledge the help and assistance of the University Archivist at Kent State, Lae'l Hughes-Watkins, as an invaluable resource in the creation of this poster. She was most helpful to provide details of the existing digital collections and provided the example that would exemplify the purpose of the redesign in the works.

## References

- Byrne, Gillian and Lisa Goddard. (2010, Nov/Dec). The Strongest Link: Libraries and Linked Data. D-Lib Magazine. 16 (11/12). Retrieved July 1, 2014, from <http://www.dlib.org/dlib/november10/byrne/11byrne.html>.
- Haslhofer, Bernhard and Bernhard Schandl. (2010). Interweaving OAI-PMH data sources with the linked data cloud. International Journal of Metadata, Semantics and Ontologies, 5(1).