

Concurrent Session Descriptions

11 Digital Publishing Trends to Watch This Year and Their Potential Impact on Libraries

Aaron K. Shrimplin, Eli Sullivan

Digital publishing is growing at a rapid pace. With the unveiling of new technologies such as the iPad 2, iPhone 4S, and Amazon's Kindle Fire, the ways information is produced, disseminated, and consumed has been radically altered for years to come. This radical transformation has only just begun and much is still to be developed. Libraries are in the midst of this rapidly changing environment and are a player in the transition from paper to digital, from passive to interactive, from individual to social. In 2012, we will see a wave of new technologies and new digital publishing apps. For this presentation we reviewed the websites of 148 digital publishing start-ups and identified 11 trends that will likely have a significant impact on libraries in the near-term. We will describe the 11 trends and present several examples of each. We will also lead a discussion on their potential impact on libraries, with a focus on both opportunities and challenges. The 11 trends are listed below:

1. Subscription Platform
2. Short Form
3. High Interaction
4. Storytelling game
5. Social Reading
6. Personal/Customization
7. Content Management Platform
8. Support
9. Start-to-Finish Publishing
10. Hardware/Guts
11. Creative Production/Development

An Update on the New Open Linked Digital Library

Joel Richard

At the 2011 LITA Forum in St. Louis, the Smithsonian Libraries and the Missouri Botanical Garden gave a presentation titled "Building the New Linked Open Library". Since then, the planning and development of the Smithsonian Libraries Linked Data Digital Library has progressed. This year we will give an update on our progress and to share our experiences with creating a linked open data digital library attendees.

The experiences and needs of the Smithsonian Libraries are likely to be similar to others' projects' goals, but we expect that there will be differences in terms of implementation of linked open data. For example, the Smithsonian Libraries is building its Digital Library in Drupal 7 and our presentation will focus on this. However, some discussion with the audience may shed some light on how others are approaching Linked Open Data from an implementation perspective.

We encourage attendees to bring ideas and questions they want to talk about. We feel that there has been much discussion of linked data from a conceptual point of view. Sharing our real-world experiences valuable to show that there is still a good deal of learning still going on in actually developing a library centered around offering linked open data.

Building a better e-books search: Challenges and opportunities in a rapidly changing landscape

Kathryn Frederick

Skidmore College, like many libraries, has seen a huge increase in the number of e-books to which it has access (from 2,000 to 300,000 in 6 years). These titles come in large and small bundles, on different platforms and with records of varying quality. Each platform has specific rules about whether the book can be downloaded, how much can be downloaded, and what software/login is required for download. The unique challenges e-books present to both staff and patrons have prompted us to completely rethink the way we process e-book records and the way we present the titles for discovery by our patrons. This has led to the development of an e-books discovery solution built with open-source software that is user-centered and optimized for iPad/tablet use. Our new e-books search allows us to include collections we did not previously provide access to while giving our patrons a better experience using the types of devices we think are most compatible with electronic print media.

Building Collections in DSpace from External Data Sources

Sai Deng, Susan Matveyeva

This presentation will address the experiments of building research publication collections from external data sources such as PubMed, IEEE Xplore and Web of Science in the DSpace based institutional repository (IR). To get data from other sources is an alternative way to develop collections for different disciplines since author self-deposit has not become a common practice for institutional repositories. This is also an effort in line with the current metadata cataloging trend of moving from item by item cataloging to batch processing of metadata, repurposing of metadata between different systems and communities, and providing value-added data services to students and faculty in an IR.

It will discuss the options to batch transform, enhance and transfer over 720 student and faculty publications from Medline format in PubMed to Dublin Core (DC) in DSpace. In the PubMed-DSpace project, PubMed provided XML is mapped and transformed to DCXML, exported to and enhanced in Excel, divided to separate departmental collections and batch loaded to DSpace server. It will talk about project planning, workflow management and record prototype creation based on the user needs. It will cover technical details including selection of metadata fields, mapping of Medline to DC, name authority check, content enrichment such as adding more DOI and other links, descriptions, copyright information and the article peer-review status, data normalization, data accuracy and consistency check. It will discuss the implementation and customization of an add-on to facilitate DSpace data batch import. At the same time it will discuss the challenges in adding institutional research outcome using this new approach such as: the advantages and disadvantages of the different options to transform Medline to DC, data acquisition and content recruitment, metadata granularity and generality, selection of multiple

subject types and identifiers, content enhancement, and copyright compliance. The cases of collecting data from IEEE Xplore and Web of Science, enhancing data in spreadsheets and batch load it to separate departmental collections in DSpace will be included. Other possibilities of adding data from external databases and the open web to the IR will also be discussed.

Collections Amplified: Exhibiting data using DSpace, Viewshare and Google Fusion Tables

Meghan Frazer

Our institution's initial foray into digital collections has centered on the cultural heritage research collections of several faculty members. At the onset, our goal for these collections was simple: to make a rich set of digitized materials publicly available through our DSpace repository. However, once our collections went live, a new set of questions emerged: How do we drive people to the collection? Can we create more interesting interfaces or virtual exhibits using this data? How can we augment the collection with new materials? How do we tie it all together? To answer these questions, we started exploring the digital humanities landscape, looking for low cost tools we could integrate with our existing DSpace collections.

Two tools which emerged from this exploration were Google Fusion Tables, a Google product, and Viewshare.org, which is provided by National Digital Information Infrastructure and Preservation Program (NDIIPP) at the Library of Congress. This session will demonstrate how to successfully export and manipulate data from DSpace in order to take advantage of these tools, as well as how to embed the resulting interface components back into DSpace or other collection websites. Attendees will also participate in a discussion on potential applications of such integration and the availability of additional tools which would work for this purpose.

Connecting systems to enhance the discoverability of hidden collections

Hong Ma, Cheryl Gowing

This presentation will address how multiple tools and technologies have been integrated to increase the discoverability of hidden special collections. The presenters will describe their experience integrating Archon, an open source archival information system software; CONTENTdm, OCLC's digital collection management software; Aeon, special collections request management system developed by Atlas Systems; and the library catalog using OpenURL, Z39.50, PHP and JavaScript. Integration with e-commerce systems and Aeon to manage the request, payment/invoicing, and delivery of photo & digital reproduction services for digital and special collections will also be covered.

Aeon offers a web-based interface for special collections researchers to request rare books, manuscripts and archives from any computer. Researchers can monitor the status of current and future requests in their Aeon account profile, as well as access their request history. We used OpenURL technology to build seamless integration between Aeon and the Library catalog and between Aeon and Archon, and custom JavaScript to integrate CONTENTdm with Aeon. As a result, patrons can conduct searches in the catalog, Archon, and CONTENTdm, and directly request special collections materials for research,

classroom visits, exhibits, and reproduction services. When they click the “request” option and log on to their Aeon account, the appropriate request form [book, periodical, manuscript] is automatically populated with citation information to review, then submit to special collections staff for processing. In addition, Aeon is used by library staff to track materials through cataloging, preservation, and digitization workflows.

The implementation of Aeon and integration with other online discovery tools makes the management of daily procedures and compilation of usage statistics in special collections more streamlined, organized and efficient. This presentation will review the technologies used to integrate functionality between these disparate systems and outline the practical workflow efficiencies and improvements to user services gained with this approach. We will share our implementation experience and how it changed the lives of both special collections staff and patrons, and give a demonstration of how the systems work together. These tools required a modest investment of financial and human resources thus are within the reach of many libraries looking for an integrated technology solution to special collections management.

Creating Web Applications for Data Collection Easily and With the User in Mind

Margaret Heller

Any librarian with any level of technical skill can develop simple web or intranet applications to collect data in a friendly manner from library staff or patrons with a few simple scripting abilities and the right tool. This session will introduce how to use tools like a CMS (such as Drupal or WordPress), an online database creator such as Zoho Creator, Google Forms, and Microsoft Access to create a fully featured data collection and dissemination application without the need of server space or much technical knowledge. Creating a good user experience and following best practices in error handling will ensure the application is used for its intended purpose. The session will include the full life cycle of creating an application, from initial prototype to iterative user testing, final deployment, and on-going maintenance. Several real-life examples of applications will be covered, including public services statistics, instructional sign-ups and assessment, and collection of user opinion/tagging data. Attendees will leave this session understanding the purpose of web applications, how to develop and maintain simple library related web applications, and what to do when you outgrow a home-built solution.

Data Mining the Twitter API

Jason Paul Michel

The use of Twitter has exploded in the last couple of years. Many libraries have a Twitter account and may follow some of their users. But, it is difficult to continually track those you follow to see what they may be saying about the library or about situations in their life for which the library may have a solution. The signal to noise ratio is low.

Utilizing the Twitter API, however, can allow you to create an application where you see only relevant Tweets from all public users in your location. For example, what are people within a certain radius of

our geolocation saying about "research" they may be doing, or a "paper" they may be writing, or an "article" they need to find and read? Knowing this information gives you a platform from which to proactively at the point-of-need respond to these users. Essentially, data mining with the Twitter API gives you a high signal to noise ratio.

This presentation will deconstruct the Twitter Search API and illustrate how to write a PHP script which pulls in data based on your unique parameters and displays it in an easy to read manner. Technologies that will be discussed are PHP, HTML, CSS & JSON data structures.

Data Visualization Walls: Building Visualization Displays with Open Data, Freeware & APIs

Lisa Santucci, Jason Paul Michel, Jen-chien Yu

Our library installed five large HD screens for Data Visualization and unique content displays that were designed in-house using free software and open data APIs. This presentation will discuss the process by which we determined what data and information to display; the student & inter-university collaboration; and the tools, software and technology deployed.

Data visualization content that will be discussed are LabStats visualization for computer availability, rotating new book feeds, special collection images slideshows, circulation statistics, current events wall and more.

The technology discussed in the presentation are Google Charts API, Google Sketch Up, Twitter API, Flickr API, NPR API, Media Signage and others.

Data-driven design decisions for discovery interfaces

Erin White, Joseph Gilbert, Jimmy Ghaphery

This panel of presenters will discuss various ways their organizations have leveraged user data to refine discovery interfaces. Though we often do not have much control over interfaces, we can make smart decisions about the areas where we do have control. Several presenters will discuss ways they have used data from heatmaps, user research and search logs to inform design decisions for their discovery tools. Presenters will offer tips on how to integrate inexpensive or free tools with a discovery system to gather data; how to analyze the data; and talk a little bit about shifting librarians' attitudes toward interface changes.

Digital screenmedia: Merging technologies, unifying content

May Chang, Michael Blake

Digital screenmedia systems such as interactive kiosks and digital signage, are increasingly popular fixtures in public places and retail outlets. They serve to provide a range of location specific information including events, news, directions, and advertising and promotion. With digital signage, content is usually presented as video clips or in a "slideshow" format with an appropriate pause time between each slide. An informal study at our library indicated that such a system would be useful for information

display but could be of limited value. Feedback indicated that many on-site users would also like to be able to independently search for location specific information. With current developments in interactive large screens, we were able to merge technologies and develop a more useful system for our needs.

We will showcase locally developed public information systems that provide "pushed" information as well as user selectable options. The first implementation is a Flash-based solution on a 27" touchscreen display; the second is an HTML5-CSS-PHP solution on a 46" LCD flat panel display. Both are located in the lobby area, and the most popular items are hours of operation, computer availability, and location of rooms and spaces. It also proved our initial study and observation that users are more engaged with library information and services on interactive screens than with static digital signage. To sustain on-going development and support of the interactive systems, we created a framework that allows scalable options and features. Phase two is to create more real-time interactive features, example room reservations and active smartphone connection to room locations displayed on the screen.

We also acknowledged the need for large screen digital signage (50") at service points for more location specific information, and service announcements and promotion. We implemented an open source digital signage application to allow distributed management of the content by librarians and staff for specific service points. To reduce duplication of content across the different channels including the library's web and mobile sites, we also unified the common content into a single source for multi-channel delivery.

The project was initiated by this author in collaboration with public services librarian and marketing staff. Appropriate hardware and accessories were sourced and installed by IT Operations, and Web Services provided application design and development. The Web Librarian as current project manager established best practices based on industry standards, and oversees ongoing development and assessment.

Doctoring Strange Results (or, how I learned to stop worrying and love my Discovery tool)

Josh Petrusa, Courtney Greene

We're all familiar with the arc of a standard film comedy: we meet our hero, some goal or challenge is presented, and the plot keeps throwing unexpected twists and obstacles in their path. Finally, they reach a climactic encounter where they emerge triumphant through their wit and charm, and everyone lives happily ever after (until the next upgrade). Our goal, to provide library users with a better set of search results and an intuitive interface via a discovery tool, is a noble quest as well. The panelists, one at a large research university and the other within a consortium of smaller colleges, will frankly discuss their experiences implementing Ex Libris' Primo and Ebsco Discovery Service -- even the parts that were more black comedy than anything else.

Much of the recent conversation around discovery centers on the benefits of increased access to resources spanning the breadth of our collections, improvements in user experience, the long-range implications for library collections and on researchers' behavior. Discovery also has another, darker side:

it shines a harsh light on all the oddities that exist within our data - whether that's vendor-supplied metadata or libraries' own large and varied sets of Marc records. Some of the questions and conundrums we've uncovered aren't unexpected - we all know there are sets of records that we've tiptoed around for years, and (sadly) we don't expect all vendors to process an article citation with the same formatting. Here's where the twist comes in: the great improvements achieved in recent years in relevancy ranking across a large dataset mean that we are now empowered to discover all sorts of problems with our data about which, thus far, we'd remained blissfully unaware.

Dealing with records is one thing, but you can't just run a script on people (unfortunately). A successful discovery implementation must also have buy-in from library staff and garner positive reactions from users. The panelists will discuss strategies for working with internal and external stakeholders to build support for the service, whether that's through user testing or through harnessing the ill will of nay-sayers to identify improvements. By and large, though, discovery is a story with a happy ending - better, easier access to more information for more people, whether they're looking for periodicals, PER, articles or journal articles, in English, Eng. or EN.

Faculty Perceptions of Federated Search Tools

Michelle Frisque

Over the last year, the Galter Health Sciences Library developed an interface to search several library systems, including the library catalog, PubMed, PrimoCentral (a citation database) and the library's website from a single search box. Federated search tools can save users the time of having to search multiple databases separately. However, searching multiple databases usually increases the number of results returned from any given search. The increased number of results may overwhelm users.

The library decided to create its own interface using vendor APIs and direct database calls instead of using Primo's out of the box interface. We selected this option so we could customize the interface to better suit our users' needs without being constrained by the software's built-in interface.

While there have been several studies focusing on undergraduate students' perceptions of federated search tools, like Primo, there have been few studies focusing on faculty perceptions of the federated search tool. As of this time there have been no published studies focusing on the use of federated search tools by medical school faculty. In this study, we tried to discover how different types of medical faculty groups perceive the new search tool. A total of six groups, two groups from each category: clinical faculty, research faculty and cross-discipline social science faculty from Northwestern University's Feinberg School of Medicine recruited to participate in focus groups.

We hope that this research can be used to direct future development of federated search interfaces and discovery tools and inform libraries' marketing and educational strategies related to releasing new search tools to faculty user groups.

"Human Factors" in Library Resource Discovery Systems: A Study of Information Seeking Patterns in a Modern Academic Environment

Haihua Li, Jason Battles

Previous studies across library literature demonstrate that students are more likely to begin their searches via Google, as the search engine is perceived to be easier and more accessible than the library catalog, other library databases or publisher platforms. Research on faculty productivity also shows the different degrees of difficulty when researching and navigating disparate information systems. These factors have significantly impacted user satisfaction in academic library environments. At the University of Alabama Libraries, two discovery systems were introduced to campus users in the past three years. During this period, the Libraries conducted multiple user studies on both systems to observe information seeking behaviors and understand the benefits and disadvantages these large, multi-resource discovery applications provided users. Our findings revealed that the fundamental human factors in information processing and decision making are readily apparent when users are performing search tasks. This observation establishes a useful framework for analyzing basic user actions and measuring discovery application functionality in a dynamic, post-MARC, mixed-data environment. The findings also provide insight into how to enhance the implementation and user adoption of these new technologies by tailoring the systems in the context of various user groups (faculty, graduate students, majors, etc.) and expected search tasks. Finally the studies' results also potentially impact on reference and information literacy as sharing the findings leads colleagues to rethink their approaches to library instruction in accommodating diverse learning styles and effectively serving the complete spectrum of campus learners and academic researchers. There is a great deal of work involved in improving modern large-scale, multi-resource discovery application. These changes may or may not be within the librarians' control. Based on our work, we believe that a "total" discovery system is important for the modern library environment. At UA, our discovery application serves as the front door to our resources. Our user research has shaped our approach to discovery services. Likewise, our reliance on user input and focus on usability has led us to engage in broader usability efforts such as the annual World Usability Day event

Increasing the level of Openness in Academic Research

Robert Olendorf, Steve Koch, Yan Wang, Lori Townsend

The increasing ability to share data, content and ideas quickly over the internet is rapidly changing how researchers do their work, making collaboration and data sharing easier and faster. Additionally, funding agencies are starting to require greater degrees of openness with data and other products of academic scholarship. Historically, researchers have been fairly closed with their data, but in this new environment some researchers are opening up, as evidenced by the Open Data movement. Additionally, there has been a longer trend towards opening up scholarly publications in Open Access Publishing. This increased openness presents a number of opportunities as well as a number of challenges.

We will outline the "Open Manuscript" method of writing manuscripts, where all of the materials related to a given manuscript in progress are kept in an open repository. Progress on the manuscript is

advertised on various social platforms and the community is invited to contribute to the manuscript as we are writing it. Using this method to develop our manuscripts has helped us discover or develop novel ideas and further refine our text. We feel the Open Manuscript approach will improve the quality of manuscripts through the solicitation of input and new ideas before submission, as well as reduce the time needed for review and present other benefits such as the identification of additional collaborators.

We will also discuss our initial findings from an ongoing comprehensive study and review of current methods and platforms for facilitating collaboration online. These types of platforms run the gamut from the more “traditional,” such as email, to online collaborative documents such as Google Docs and open repository and versioning sites such as Github. We will briefly review the platforms and present a set of best practices for digital scholarly collaboration and increased openness in research.

Discussions about increased openness in scholarly work are often spent contending with the potential risks to individual researchers. We will conclude by presenting a brief game theoretical justification for increased openness in research, arguing that it not only benefits academia but also the researchers. Additionally, we will explore how researchers and academic culture can change to promote greater openness.

Is Anybody Actually Using This? Gaining Insight to Technology Ownership and Use for Planning and Purchasing

Elizabeth German, Anita R. Dryden

In the current landscape of rapidly evolving technologies and explosive growth in ownership of mobile devices, libraries may find themselves unsure as to which technology devices their users own and use in their daily lives. It can be difficult to determine which devices and platforms the library should support, develop for and provide access to for patron use. A variety of data sources exist that can help provide strategic insights to these topics, and inform directions to best serve your users.

Librarians at the University of Houston conducted a broad assessment of personal technology ownership and use among undergraduate students, as well as utilizing external assessments (such as the ECAR study published by Educause) to evaluate trends within our user population and the general public. This presentation will discuss ways to use assessment data from local and national sources to inform decisions related to planning for and purchasing library technology.

JQuery Mobile Framework: an easy and professional way to create a mobile website

Don Kim

jQuery was released in August 2006, it is currently one of the most used web developing language, because the syntax is easier to develop dynamic web pages.

In addition, since mobile usage has grown for inquiries in libraries, building mobile webs are necessary but difficult to produce unless you have the knowledge to include direct scripting. I have gained the ability to create mobile web pages using jQuery mobile which aids in easier production. jQuery Mobile

1.0 was officially released in November 2011 and currently in version 1.0.1. The newest Web authoring application, Dreamweaver 5.5 includes jQuery mobile as mobile web templates. The jQuery Mobile Framework fits well for the popular smartphone and tablet platforms.

Murray State University Libraries successfully released the first mobile website (<http://lib.murraystate.edu/mobile>) on December 12th 2011.

The presentation will include:

- A brief research report about the importance of developing mobile web sites with usage growth of mobile devices
- A current design trend in libraries mobile web and what kind of common library services and information are included on the library mobile sites
- Overview and description about jQuery and jQuery Mobile Framework and its benefit of use including deploying and using the desing tool (called themerRoller), Important functions and techniques on using jQuery Mobile, How jQuery can work with Dreamweaver 5.5
- An overview of Murray State University Libraries mobile site such as information architect, design, included services, and additional web techniques.
- Discussion will include the project timeline how the Library applied this project, the roles of all participants, a detailed explanation of used and applied technology for validation, report, and additional tools, and applications to implement the service.

Library Analytics Toolkit

Carli Spina

As libraries face increasing economic pressure and rapidly changing patron needs, statistics are an ever more important tool for advocating for libraries, promoting the impact libraries have on their communities and identifying patron usage patterns. Statistics are also crucial to respond to shrinking budgets and develop long-range plans for the future. Through this project, we researched how data is collected at Harvard University libraries and how the resulting statistics are used. To find this information, we met with a wide variety of library professionals in various types of libraries and archives to identify which metrics are most useful, to determine how information is collected and used, and to identify future trends in library information analysis. Our findings provided the basis for the Library Analytics Toolkit, an open-source software tool developed with the ultimate goal of allowing users to visualize a range of library usage events and statistics in a fully configurable analytics dashboard. For example, this will allow users to visualize changes in usage patterns due to evolving patron needs and will provide support for resource allocation to address these needs.

As the first stage of the development of this software tool, we have focused on visualizations of circulation events and collection development information. Our intention is to focus on creating a web-based analytics application that can later be expanded to visualize other types of library data. Because

our software will be open source, additions to the Toolkit can be developed by either our team or other libraries, making it possible for this Toolkit to fit the needs of libraries with diverse needs.

Our presentation will discuss both our initial research into the use of analytics and the resulting software application and its possible future applications. We will show how the software application will be used at our library, but will also discuss how other library professionals might use, and add to, the application to visualize and understand the key metrics for their libraries.

Library Favorites and Resource Modeling

Ken Varnum

Web site visitors to the University of Michigan library can save some kinds of resources (catalog items, databases, online journals, and article citations) to their user account for future use. Users can optionally organize these resources into categories (the system recommends courses they are taking and categories they have previously used, but individuals can create any categories they like).

In this session, attendees will learn about our design process (including user studies, design elements, and Drupal coding) and the usage of the tool. The pool of saved items becomes a rich data source for providing anonymized, aggregated data to library staff and site visitors. We will conclude by exploring some of the possible uses of this data, including building supplemental reading lists for specific courses.

Metadata Manipulation and Repurposing Workflows for Institutional Repositories and Digital Projects

Maureen P. Walsh

This session describes tools, methodologies, and digital project use cases for the manipulation and automated repurposing of existing metadata. The presentation will focus on repurposing metadata for batch loading into an institutional repository and will include methods for re-using MARC catalog metadata, embedded image metadata, and printed text metadata. Tools and methods discussed will include XSLT, MarcEdit, ExifTool, XML editors, CSV editors, text editors and regular expressions. As part of the metadata repurposing workflows, an overview of two methods (Perl scripts and the Simple Archive Format Packager Java tool developed at Ohio State) of building the simple archive format for DSpace item importing will also be included.

Mobile Library Catalog using Z39.50

James Paul Muir

A talk about putting a new spin on an age-old technology, creating a universal interface, which exposes any Z39.50 capable library catalog as a simple, useful and universal REST API for use in native mobile apps and mobile web.

The backbone of the project is a REST API, which was created in a weekend using a PHP framework that translates OPAC XML results from the Z39.50 interface into mobile-friendly JSON formatting.

Raw Z39.50 search results contain all MARC information as well as local holdings. Configurable search fields and the ability to select which fields to include in the JSON output make this solution a perfect fit for any Z39.50-capable library catalog. Other enhancements can be added to create a pleasant and seamless user experience by using a remix of existing technologies such as Google Book cover images, Off Campus Sign-In, and Library patron account integration.

The talk includes the exploration and demonstration of the Ohio State University's native app "OSU Mobile" for iOS and Android and shows how the library catalog search was integrated a wrapper REST API around Z39.50, as well as an exploration into the technical side of the REST API. For the technical folks, requirements and a quick how-to will be shared.

Enjoy this alternative to writing a custom OPAC adapter or using a 3rd party service for exposing library records and use the proven and universal Z39.50 interface directly against your library catalog.

Next-Generation Collection Management: Using Augmented Reality Mobile Applications to Automate Shelf Reading and Inventory Control

Stacy Brinkman, Dr. Bo Brinkman

At its best, technology assists humans by automating tasks that humans naturally do poorly, and highlighting what humans naturally do well. One example of an activity that humans are poor at is shelf-reading in a library: it is a monotonous and tedious task, and it is easy to fail to notice that numbers are out of order, especially if a person is tired or distracted. For most libraries, however, shelf-reading is the main method of inventory control; while it is possible to use RFID systems, these are often too expensive to implement.

This presentation will show how an Augmented Reality smart phone application can be used to semi-automate the shelf reading process while producing inventory control reports. This application, called ShelvAR, was developed through a collaboration of computer science faculty, students, and librarians. Instead of requiring specialized hardware or other equipment, ShelvAR utilizes materials that many library staff and patrons already have access to: paper labels and smart phones. This application uses simple black and white labels with boxy codes that correspond to the book's LC call number that are affixed to the spine of each book. ShelvAR then scans these labels and "reads" entire shelves of books in seconds, indicating which books are out of order or missing. The application can also generate reports based on what it "saw" in each shelf reading session, thus producing inventory and internal use statistics for library staff to evaluate.

In addition to a demonstration of how ShelvAR works, we will present the results of systematic testing done on trained and untrained shelf readers, measuring increases in efficiency and accuracy. We will also present a per-volume cost analysis of implementing this tool, and show how ShelvAR is a cost-effective option for automating the management of physical collections without requiring specialized equipment. Furthermore, we will discuss the uses of Augmented Reality today, and its potential uses in libraries. This session will include a hands-on opportunity for participants to try out ShelvAR on posters of several ranges of books in varying degrees of disarray, and will include additional opportunities for

participants to explore further applications for Augmented Reality in libraries. This session is suitable for all audiences.

Persona Most Grata: Invoking the User from Data to Design

Alexa Pearce, Nadaleen Tempelman-Kluit

In this presentation, we will discuss a project at New York University (NYU) Libraries to construct personas out of service generated data. Personas, stemming from the field of User Centered Design (UCD), are hypothetical users created to represent large sets of actual users. Personas can help inform the design of services and interfaces for particular segments of a user community. As libraries increasingly emphasize the importance of taking a user-centered approach to service design and improvement, they stand to benefit by incorporating data generated personas into their design processes.

Also key to user centered services are robust assessment activities. Libraries increasingly employ data driven tools and practices to manage and interpret their services. However, making that data accessible and actionable remains a challenge that this project seeks to address. By applying service generated data to the construction of personas, we hope to create tangible methods by which we can better utilize our data and represent our users.

The Ask a Librarian Service at NYU Libraries generates around 2000 chat and text transcripts per month. Recognizing the qualitative value of these transcripts, we decided to code a sample of them into points of data that we would then map to persona traits. This presentation will detail the process of collecting, coding, and mapping this transcript data to a set of evidence based personas to be applied to user centered interface design at NYU Libraries.

Preserving Faculty Research: University of Nebraska-Lincoln Data Repository

Kiyomi Deards

Data curation has become an integral requirement for research. To address increasing requirements by funders for comprehensive data management the University Libraries provides data curation services ranging from consultations to creating the interface for a campus wide data repository. Additionally, the Libraries have established a new campus wide data policy to build awareness about the need for data management, preservation and access. To promote Open Access the policy and data repository interface encourage researchers to make their data publicly available—if possible. The presentation will begin with the development of the Libraries data curation services. Including a demonstration of the Data Repository and provide detail regarding researchers' options retention, access, rights, and metadata for data deposits. The promotion of this online tool on campus, authenticating researchers, and the integration of the tool with other UNL resources will also be discussed.

Primary Source Corps: Leveraging Gamification & Crowdsourcing to Improve Findability & Context in Digital Collections

Holley Long, Thea Lindquist

Although digital collections are proliferating, research indicates that these valuable resources are underutilized despite growing demand for online primary sources to support university curricula. Librarians from the University of Colorado Boulder conducted a series of interviews with students and faculty in humanities disciplines to determine how to facilitate student engagement with digital collections. The research findings led to the development of Primary Source Corps, an online educational game that leverages gamification and crowdsourcing to meet user needs for improved findability and contextualization of primary sources. While educational stakeholders were the focus, these needs apply, to one extent or another, to all users of online collections of primary sources. This presentation will introduce PSC, elaborate upon the user needs that informed its development, and discuss the broader trends of gamification and crowd sourcing within this context.

Read/Write Web Services: Let the Great Data Remix Begin

Alice Sneary, Andrea Schurr, Kathryn Harnish

What if libraries could use APIs to view and change data in nearly any type system—live, on the fly—and integrate their own tools into existing system workflows? What if they could share what they build and other libraries could use it—without knowing a single line of code? The new world of read/write Web services, now available through the OCLC WorldShare Platform, offer up an incredibly rich and risky environment for libraries to cull, combine and correct data in OCLC's systems.

In this session, Andrea Schurr from the University of Tennessee Chattanooga will showcase how UT Chattanooga has been experimenting with the read/write services now available through the WorldShare Platform.

She'll share how, as a developer, she approached the use of write services and discuss the implications—and opportunities—associated with the use of these new services.

Kathryn Harnish from OCLC will also be available to answer questions about how the read/write services work, what it might mean for library data-wrangers in the future, and how the OCLC WorldShare Platform fosters technology innovation for librarians, their partners and users.

Remote Usability Testing: Methods and Tools to take your Testing outside of the Library

Jenny Emanuel, Charlotte Roh

As catalog, database, and research tools expand, libraries are increasingly paying attention to 1) the usability of interfaces and 2) the techniques for studying how users interact with them. In the past, most of this research centered on in-person observational studies and interviews. However, this type of research may place library users in unnatural surroundings that may not reflect exactly how they

interact or experience an interface. Not only is testing in a lab not natural to users, it only allows for testing of users that can physically come to the library or other testing sites. Lab testing does not include users who do all their work virtually and never come to the library, distance education students, and disabled users who may require specialized software to use computers.

In the usability field, there is now increasing attention paid to collecting data in more natural environments through ethnographic field research and remote usability testing methods. This presentation will provide an overview of ethnographic methods and how to apply them to user research in your library. This includes a practical description of various free and low-cost methods including online card sorting, user feedback forms, analytics, tracking tools, and video conferencing software that libraries can utilize to collect data from their users remotely.

Real world examples will be employed in the discussion when possible, taken from the presenters' own experience collecting user experience data from a grant-funded study. The study examines the information seeking habits of researchers working for a multinational company across a range of research and development tools. There will also be an interactive discussion as to how audience members can design studies geared towards remote users of their library as well as time for more specific questions.

Seeing the Forest by Counting the Trees: Using a Variety of Data Sources to See the Big Picture

Susan Hurst, Andy Revelle, Aaron Shrimplin

Many libraries attempt to count every possible patron interaction in an attempt to both define their current situation and to predict future staffing, budgetary and collection needs. This presentation will assess the effectiveness of various data points in predicting future activity and needs.

The data points included in our study were reference transaction statistics, electronic journal downloads, door counts, circulation statistics, e-book usage, and database queries for a period spanning 2009 to 2011. We also looked at Twitter activity discussing research activity within a 5-mile radius of our library. This various data points were analyzed to locate correlations in the data that may be predictive of increases in related services. One hypothesis was that circulation and usage data could serve as leading indicators for traffic at service points. Thus, an increase in circulation figures or journal downloads might presage an upturn in chat or in-person reference queries. In a similar vein, we will also be examining local Twitter feeds for the frequency of terms such as "library", "homework", "paper", or "project". By relating the frequency of specific library-related terms in Twitter to our other data sets, we can ascertain if this could also serve as a predictor of library usage. Using SPSS we will statistically analyze the strength of the correlations among these various data points to see if our hypotheses bear out. We will then examine any patterns to see if they remain consistent over time and note if there are consistencies between the Fall and Spring semesters.

By examining these varying types of data across service points and material types over a three year time-span, we will identify shifts in the types of materials and services being accessed, and examine the ebb and flow of patrons over the course of the academic calendar. By noting the existence and

consistency of any patterns within these data points, we can then determine whether to apply them to the staffing of reference service points. Much time and effort is currently put into the gathering and analysis of various library statistics and data. If we can determine those that are actually useful, we can focus on them and free up staff time (and possibly improve morale) by eliminating the collection of superfluous data.

Stewarding Research Data with Islandora

David Wilcox

Islandora is a digital asset management system built on Drupal, Fedora and a host of other best practice open source applications. In the last few years Islandora has become a premiere solution for academic and cultural institutions that need to manage large and diverse collections of digital material, including research data. The University of PEI has been using Islandora for 5 years and currently hosts over 75 research sites, or Virtual Research Environments, which provide faculty with collaborative web environments as well as systems for stewarding complex research data in the long-term. Islandora's flexible architecture means it can be used for any kind of data in any discipline. The session will provide an overview of the architecture and current best-practice examples from biology, chemistry, psychology, educational research and more. It will also highlight a generic research data system that was developed for the Smithsonian Institution, an example of how diverse metadata standards can be leveraged to bring the best in accessibility and preservation to the world of research data.

Student/Library Collaborations for Mobile Application Development

David Ward, Jim Hahn, Lori Mestre

Highlighting the Forum themes of data discovery, linking, integration, display, and mobility, this program will present findings from an Institute of Museum and Library Services (IMLS) National Leadership grant project on student-led mobile application development for libraries. The grant involves librarians from a large academic library working with students from Computer Science and related fields to modularly design mobile applications that mash-up data from a variety of library resources. The program will focus on challenges and best practices for librarians as they collaborate with student-led teams during the creation phase of library tool development. This includes strategies for soliciting and translating student ideas and concepts about library research and resources into the mobile environment, as well as discovering what needs students have that can uniquely be answered by mobile solutions.

The presentation will include methods for utilizing existing library APIs and designing new ones, as well as building connectors for individual data silos to create a flexible overarching infrastructure for mobile mash-ups. A primary point of emphasis will be on designing tools to help users build connections between related library resources. Details will be presented on how to design this infrastructure in a modular object oriented way, so that future development teams from any library environment can pick and choose components to build onto and/or add into their own mobile offerings. Additionally, the potential uses of functions unique to the mobile environment (e.g. augmented reality and location based-services) will be discussed.

The final part of the presentation will include an evaluation of mobile applications, including methods for assessing use and value for student curricular needs. This evaluation will include an examination of mobile usability and the mobile user experience. Details will be provided on a formative assessment methodology for involving both students and student-led development teams in mobile app user experience studies. These studies address the primary grant questions regarding what data students want to be able to access and manipulate, and how they want to have the data presented in the mobile context.

The Alchemist's Guide to Research Data: ensuring data usability

Wayne Johnston

Two of the basic aspects of a data management program are the repository platform for storage and retrieval, and rich metadata for contextual and administrative information about the data. Often the data itself is preserved in the state in which it was developed by the researcher. There can be advantages in keeping the data in its original form but there are concerns as well. What if it is in a proprietary format that will become obsolete? Even with extensive metadata will future researchers be able to interpret and repurpose the data? If the data contains information of a private nature that may prevent it from being accessible to other researchers unless it has been anonymized. There are many reasons why data transformation can be a critical component of sound data management. Many data curators may recognize the need for data transformation but they are daunted by the time and technical expertise that would be required.

This presentation will review the reasons why research data may need to be transformed. It will analyze the formats that may be considered for optimal storage and preservation including customized XML, XML-based data markup standards and specifications, coded data, flat text formats, open standards compliant formats, ubiquitous proprietary formats and others. Finally, we will look at tools and methodologies that can facilitate the work of transforming data. Anonymization of data will be a topic of particular focus.

Much of the information presented will be drawn from the practical, hands-on experience of the University of Guelph Library's Agri-Environmental Research Data Repository project. This initiative has provided an excellent laboratory for working with a wide range of data sets from many disciplines across the campus. We will also present an environmental scan of trends and best practices from world leaders in data management. Attendees will also be invited to share their concerns and experiences dealing with data at their local institutions.

The Dream of Data Integration

Kara Reuter, Stefan Langer

As library services are increasingly offered online, library IT staff are challenged with implementing and administering more and more third-party products beyond the ILS, such as content management systems, event calendars, room scheduling systems, e-commerce services, e-mail newsletters, online job

application systems, chat reference services and more. These products are built on different platforms with vastly different interfaces and varying levels of usability. These products also offer different methods for customization, from basic skins to embeddable widgets to data feeds to full-fledged APIs. As a result, patrons visiting library websites to access our online services can end up navigating a jumbled mess of designs and interaction styles. Creating a consistent online user experience from this chaos requires resourcefulness.

This presentation will first address the importance of presenting a consistent user experience. We will outline several approaches we have used at Worthington Libraries to integrate third-party products with our website. Straightforward solutions include vendor collaboration, the use of data feeds and custom programming; less-desirable solutions include frames, CSS trickery and misdirection. Finally, we will encourage libraries to advocate for better, more flexible software products from vendors.

The Kuali Open Library Environment (OLE): A Model for Deep Library Collaboration and a Demonstration of our Latest Software

Robert H. McDonald, Michael Winkler, Kristin Antelman, Brad Skiles

Traditionally commercial vendors have offered integrated library system software (ILS) to track and manage the acquisition of physical books, journals and films. With the shift to an increasingly electronic and diverse set of resources, the Kuali OLE project has built a next-generation technology environment that will manage physical and electronic acquisition in one workflow, provide for diverse formats of metadata, and utilize an enterprise-level workflow engine to support flexible and outcome-focused business process architecture. This community-source library management system is being defined through the deep-collaborative efforts of the partnership of top research and academic libraries. This partnership includes Indiana University, Duke University, Lehigh University, North Carolina State University, University of Chicago, University of Florida, University of Maryland, University of Michigan, and the University of Pennsylvania (<http://ole.kuali.org>). This session will focus on the Kuali OLE 1.0 software release candidate as well as the first phase of partner institutional implementations. Additionally, our speakers will also be able to update attendees on our 8-month international collaboration with the Joint Information Systems Committee (JISC) and JISC Collections, Global Open KnowledgeBase (<http://gokb.org>), that focuses on developing a platform and open data source to support management of electronic resources across the information supply chain from publishers to libraries to users.

Understanding data services in distributed and collaborative research settings

Erik Mitchell, Jeffery Loo

Research is increasingly collaborative and distributed (e.g., e-research/science, multi-institution work, international collaborations). In order to support this work, new tools, data collection approaches, and data analysis processes are required to support collaborations among researchers. While data publishing and curation is an important piece of this work, providing support for the shared data collection and collaborative analysis as part of the research process is of growing importance. As

libraries expand their support of research and data curation activities, having a good understanding of the issues, technologies, and competencies required is important to developing successful programs.

This presentation will explore the technologies, processes, and literacies required to conduct distributed and collaborative research through the case study of a minimally-funded, mixed-methods research project conducted by the presenters. In order to complete this research project, the presenters had to plan for data management, curation, and publication needs in a collaborative and distributed manner during the planning, data gathering, data analysis, and publication activities. The presenters will discuss the needs, challenges, and solutions that emerged during this process. This case study brought to light important data management elements to plan for and served as a platform for exploring tools and technology literacy elements.

A discussion of data management tools will include 1) Survey platforms such as Qualtrics (<http://qualtrics.com>); 2) Data analysis tools - including dedoose (<http://dedoose.com>), reframe (<http://getreframe.com>) and knowdoo (<http://knowdoo.net>); 3) Collaboration tools; 4) Quantitative data analysis platforms including Google Refine (<http://google.com/refine>) and Amazon AWS tools; 5) Data sharing and curation tools including Dropbox (<http://dropbox.com>) and Box.net (<http://box.net>) and 6) Data publishing platforms including ICSR (<http://http://www.icpsr.umich.edu/>). Finally, there will be a discussion of the implications for research and data management literacy programs in libraries including the presentation of a curriculum developed at UC Berkeley Library to support these activities.

Web Scale Discovery: A Content-Side View

Theodora Hein, James Mouw

One key way that JSTOR is able to understand our role in the 'flow' of the discovery and delivery of content is through tracking patterns of usage on the JSTOR site. As an increasing number of JSTOR participating libraries have begun to implement web scale discovery services, we have begun working to understand the impact of these services, and other external factors, on usage of the JSTOR site.

We have undertaken an exploration of JSTOR usage statistics at institutions where discovery services have been implemented, alongside institutions where they have not. We will be looking at changes in usage over time at these institutions, and will be reviewing the usage with librarians at the institutions. This is a highly collaborative project that allows both JSTOR and the libraries to develop a more nuanced understanding of the factors that influence usage.

The University of Chicago has been an active participant in JSTOR's Local Discovery Integration pilot project as well as in the exploration of usage statistics over time, as they relate to discovery and other factors. Jim Mouw from the University of Chicago will share the way that they have analyzed and utilized the findings.

What Do You Mean "Get Up to Speed on Data"? Self Educating on the Fly

Abigail Goben

Libraries are tackling (or being asked to tackle) data as part of the future of research and teaching, but with stagnant budgets and few hiring opportunities, many locations are relying on current staff to support this new initiative. While some SLIS programs are offering courses, many active professionals have neither time nor funding for a formal class. This session will provide ideas for self education to help active librarians direct their learning. General topic areas that will be addressed in session will be (1) determining what kind of skills need to be developed to get up to speed with data services; (2) looking at professional social networks for ed opps and people in the field to learn from (blogs, twitter, divisions to consider joining); (3) noting some traditional continuing education opportunities will be identified (classes, conferences); (4) identifying libraries who are leading the way in data support to beg, borrow and steal ideas from; and (5) figuring out who else on campus to collaborate with so the library's work isn't going into a void.

What Public Library Patrons Want and How to Deliver It On Your Web Site

Nina McHale

In January 2012, members of the Digital Services Department at the Arapahoe Library District conducted a 9-question web user survey asking both patrons and library staff about their use of the library's web presence. This session will describe how members of the Systems and Web Teams distilled actionable information from over 400 quickly collected survey responses in three languages to improve the user experience across the library's web site, Millennium Catalog, Overdrive ebook platform, and other tools. The five recommendations that emerged from the collocated survey results lead Digital Services staff to rethink how the District's online tools were customized and integrated, provided guidance for a backend rebuild of the web site as well as modifications to the site's front end, and reshaped and streamlined the workflow of staff members who work on the site.

Where's that Book? Transforming Bib. Data into Item-Level Collection Maps in the Web PAC.

Geoffrey Timms, Jeremy Brown

The Library of Congress Call Number system used to locate items in the physical library frequently befuddles students who are used to progressively simple online access to library resources. In response to numerous comments from students and subject liaisons, the Systems Department of Mercer University Libraries developed an item-level mapping system as an enhancement to its Millennium online catalog.

For each item in the collections which have been mapped, a map link appears both in the results list and the item record. A base floor map is dynamically edited and displayed within the page that the user is currently viewing. The range upon which the item is located is highlighted, an arrow shows on which side of the range the item is located, and a line of travel indicates a typical path from a set starting point to the shelf. The physical ranges are numbered for convenient identification. During this session we will

showcase the item-level mapping product, contemplate the data organization and methods required to provide item-level mapping, and consider a number of challenges which have been, and have yet to be, overcome.

The maps are enhanced by two additional innovations. A QR Code is embedded into the map so that upon scanning the code, the map can be displayed on a mobile device for viewing as the user travels to the shelf. A comment form also provides the user an opportunity to report problems with the accuracy of the map or to offer other input. Technologies employed in developing this service include: JavaScript, jQuery (a JavaScript Library), PHP, GD (a PHP graphics library), SQLite, Django (a Python framework), and the Google Charts API.

WorldCat Library Finder: the Front and Back-Story: a practical application of responsive web design and Hadoop data storage

J.D. Shipengrover, Jeremy Browning

Responsive Web Design is a methodology that provides the ability to build one single-source website to serve all internet accessible devices; mobile, tablet, screen and beyond, without degradation of the user experience. With Responsive Web Design there is no need to build and maintain separate mobile and desktop websites; no need to build a device-specific web app. Its' the magic bullet overworked web managers, developers and designers have been waiting for. But what exactly is Responsive Web design? How hard is it to actually implement and maintain?

These are questions we will address in the first portion of this session. We call this the front story – in this portion of the session we will explore the development of the front-end of the WorldCat Library Finder project. This section will primarily cover how we implemented a practical, real-world use of the Responsive Web Design methodology. It will outline what Responsive Web Design is, its pros and cons and summarize our experience using it.

Like Responsive Web Design for the front-end, Hadoop has garnered a lot of attention lately for its ability to easily and inexpensively process large amounts of data, regardless of structure. This allows for more agility in data exploration and can radically change how the backend of a web application is developed. Gone is the need for access to a large, expensive data warehouse. Now the data can be explored using off-the-shelf computers and fairly simple, open-source tools.

The second half of the session will cover the back story, or how we developed the backend of WorldCat Library Finder. In this part of the session we will cover the use of WorldCat APIs to collect data, and how we implemented Hadoop as a means to process and explore the collected data. Here we will cover what Hadoop is, how we used Hadoop in our project and summarize our overall experience using Hadoop.