First Year Report: March 2007-February 2008

Grant Project Title: DLF Aquifer Development for Interoperability Across Scholarly Repositories: American Social History Online

Name of Grantee: Digital Library Federation

Contact Information: Principal Investigator:

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SUMMARY OF PROGRESS

DLF Aquifer Development for Interoperability across Scholarly Repositories: American Social History Online launched as soon as the Digital Library Federation (DLF) received funding from The Andrew W. Mellon Foundation in March 2007. The core team is in place, project architecture is established and the American Social History Online Web site is available for testing and assessment and has been well received by scholars who have previewed it. DLF has subcontracted with libraries for the Sakai and federated search integrations and development is on schedule. The Aquifer director and Aquifer Implementation Group (AIG) are working on strategies for sustaining American Social History Online beyond March 2009.

Based on the projected timeline in the original grant proposal, the project is ahead of schedule. Activities listed for completion by the end of the first year were:

- Six months (October 2007):
  - Select architectural model
  - Analyze objects and build data models
  - Gather American Social History Online content
  - Plan assessment activities

- One year (April 2008):
  - Begin integrating American Social History Online into course management system
  - Begin integrating American Social History Online into a federated search tool
  - Begin integrating American Social History Online into commercial search service
  - Begin integrating American Social History Online into a citation management system

In addition to completing the listed tasks, the development team has created a Web site for American Social History Online. The Web site is important for the search engine optimization (SEO) that comprises commercial search service integration and provides the underlying service framework for the Sakai (course management) and federated search integrations. The Web site also supports the Zotero integration (citation management system). This report describes project activities and accomplishments from March 2007--February 2008.

PROJECT DETAIL

Administrative

Prior to the grant award in March 2007, the AIG had created and posted job descriptions, solicited applications, and interviewed candidates with the understanding that position funding was dependent on the grant award. As soon as the grant was awarded and the funding released, the AIG hired a strong core team:
Susan Harum, Business Analyst/Assessment expert,¹ based at the University of Illinois at Urbana Champaign (UIUC)  
Chick Markley, Systems Architect, independent contractor based in Berkeley, California  
Tom Habing, Research Programmer/Developer, based at UIUC  
Kat Hagedorn, Data Analyst, based at The University of Michigan  

Susan Harum and Chick Markley are full time on the project. Tom Habing and Kat Hagedorn are half-time. The core team met each other and the Aquifer working group members at the DLF Forum in Pasadena, California in April 2007, and held a face-to-face meeting in Ann Arbor in mid-June. These early meetings enabled the team to make key decisions quickly and plunge into development right away.

One decision was that a portal or Web site would be an important component of the project. The rationale for this decision will be explained in the Technical Architecture section, below. Rather than seek another half-time developer with user-interface skills, the core team recommended that DLF contract with Citrus Studios, for the Web site design.

Susan Harum and Katherine Kott made the final selection of hosts for the Sakai integration and federated search scenarios, Indiana University and UIUC, respectively. Based on the architectural framework, it made sense for commercial SEO and the Zotero implementation to be developed by the core team therefore no subcontracts were made for those two items. Assessment for SEO will be distributed with both Yale University and the University of Southern California hosting assessment activities. New York University will host an assessment activity for the Zotero implementation.

The team also set up new tools for collaboration, a project wiki hosted by Indiana University and a blog aggregation called AquiSphere. The wiki has private areas for team business and public areas for sharing project information with the community.

Technical Architecture and Development Process

In consultation with the Technology Working Group (TWG), Chick Markley quickly mapped out the systems architecture and project data flow. Data ingest continues to rely on the Digital Library eXtension Service (DXLS) system at The University of Michigan, which had already developed Metadata Object Description Schema (MODS) harvesting for a predecessor DLF project. After harvest, the data is re-exposed and picked up for the American Social History Online portal. The team focused on portal development first, as a method for exposing American Social History Online collections to commercial search services as well as to provide a vehicle for early assessment and promotion to potential collection contributors. Previous attempts by libraries to get search engines to index library collections by providing metadata to the search engine providers have not been successful. The Aquifer approach is to learn as much as possible about how the search engines operate and design the American Social History Online system accordingly. One of the potential values to libraries of contributing collections to American Social History Online is getting more traffic directed to their collections without having to attend

¹ Called collections curator/assessment expert/faculty liaison in the proposal
to SEO in the home environment. In addition, the Web site provides the launch-pad for the Zotero integration and will support the Sakai and federated search scenarios through Search/Retrieval via URL (SRU).

The system is being built with open source components based on Ruby on Rails with Solr for indexing. *American Social History Online* is a pioneer project for Ruby on Rails in the digital library community but interest in and support for Ruby is growing, particularly among younger developers. Incoming MODS records are mapped to Solr using style sheets. SourceForge is used to track development and share code with the community.

To address early difficulties the Aquifer Services and Technology Working Groups had reaching consensus on a development process, the core team agreed to use a lightweight method, document it, and share it with the digital library community. A poll of TWG members showed that most libraries do not use a standard development methodology. Although developers would prefer to work to specifications, digital library developers are often expected to build systems based on descriptions in grant proposals or other similar conceptual documents. Digital library developers with experience in industry cautioned against using an overly elaborate development methodology, which might create its own overhead and be too heavyweight for the scale of project typically developed in a digital library environment. With this in mind, the core team settled on a version of agile software development for *American Social History Online*.

The Technical Advisory Group, led by Sayeed Choudhury (Johns Hopkins), met by conference call in July to review the systems architecture and general plan. Carl Lagoze (Cornell), Sandy Payette (Fedora Commons) and Tim DiLauro (Johns Hopkins) also attended. Other advisory group members not in attendance were Peter Murray (Ohiolink), Noha Adly (Bibliotheca Alexandrina), and Martha Anderson (Library of Congress). James Bullen, TWG chair, Chick Markley, and Katherine Kott briefed the group and answered questions about the project. The meeting was interactive and positive. The group supported the general architectural direction, stressed the importance of integrating “asset actions” into *American Social History Online* in a robust way, and reminded the team to stay in touch with the National Science Digital Library (NSDL) project to insure that Aquifer development applies lessons learned from NSDL.

At a second Technical Advisory Group meeting, held at the DLF Fall Forum in Philadelphia, Sayeed Choudhury invited John Kunze (California Digital Library) to join the group to review persistent identifier methods used for *American Social History Online*. Sandy Payette and Tim DiLauro also attended. Peter Murray joined by phone. In addition to persistent identifiers, the group also discussed possible integration of *American Social History Online* with Fedora. Subsequently, Sandy Payette and Dan Davis, Fedora chief architect, have discussed with Katherine Kott and Chick Markey the possibility of optimizing *American Social History Online* for use as a Fedora “front end”. This integration could eventually support a workflow for scholars or digital libraries to add items or collections to a repository, as well as provide an open source access solution for Fedora repositories.
Evaluation and Assessment

One of the principles of agile software development is to create a basic product as soon as possible, obtain direct user feedback and “iterate,” rather than investing time documenting functional specifications up front. Working in this mode, Chick Markley had a stubby portal, based on use cases and business requirements created by the Services Working Group (SWG), up and running on his laptop by the end of July. The application was ported to a temporary server at UIUC in early August, loaded with collection data from the Library of Congress, Indiana University, University of Michigan and University of Tennessee, Knoxville, and released for internal evaluation. Core team and working group members began testing the portal, and logging bugs and requests for features on the SourceForge site.

Susan Harum and Katie Bauer (Yale) organized the first evaluation/assessment by conference call for a group of five scholars on August 30, 2007. It was important to engage scholars early in the development process so one faculty member, two graduate students and two librarian “proxies” were recruited. By the time the first assessment took place, the portal was at its permanent address--<http://www.dlfaquifer.org/>, although still awaiting a move to a virtual server slice on a new server at UIUC, which took place in mid-September.

Appendix I contains the script used for the first assessment conference call. Prior to the call, participants were asked to preview the portal and familiarize themselves with the collections. Using agile development methods, developers interact directly with “customers”. Thus, Chick Markley and Tom Habing participated in the conference call, facilitated by Susan Harum. Participants provided useful feedback about the features they want in American Social History Online, such as “more visual tools for undergraduates.” Based on this feedback, the developers immediately integrated the Simile Timeline from MIT into the portal.

Three additional interviews were done over the following six weeks with eight participants. Appendix II lists participant names, roles and organizational affiliations for both the assessment conference call and the interviews. The interviews were conducted one on one with the participants using questions derived collaboratively by the SWG. Results of each round of interviews were reported to the developers within one week. The developers responded by implementing the recommendations from the participants into their workflow, in advance of the following round of interviews. Examples of this include: the implementation of the collection registry and “browse collections” feature; the implementation of faceted searching; the implementation of subject clouds for browsing; the implementation of genre as an option for limiting; the implementation of both “list” and “grid” views for results; normalization of collection names for full record results; and the implementation of Thumbgrabber (a utility to generate thumbnail images) to provide more thumbnails of non-image items.

In addition to feedback directly influencing the development of features on the site, the interviews contributed to current research of the Metadata Working Group (MWG). Specifically, the participants confirmed the need for sufficient object metadata to determine that the object is what they seek, to determine what can be done with the object (access conditions) and to be able to provide consistent references to the object when using or citing it in a publication. A lively debate ensued within the MWG and the SWG on the topic of date
normalization, resulting in the use of the California Digital Library’s date normalization utility based on TEMPoral Enumerated Ranges (TEMPER) syntax. Upon completion of the agile assessment, the MWG and the SWG continued to collaborate closely with the developers on the development and implementation of faceting browsing.

While it is likely that many of the features would have been implemented without the feedback from the participants, it is clear that the agile assessment drove the prioritization of tasks. Multiple phone interviews and email updates resulted in buy-in for participants.

By engaging the agile software development model, assessment activities started earlier than the project grant proposal anticipated. Because rapid prototype assessment begins early and requires frequent interaction between end users and developers, in a distributed project like American Social History Online, it is more feasible for meetings to be held virtually rather than in person. More robust, in person assessment activities, focused on the local implementation scenarios remain part of the project plan and will begin in fall 2008.

Collection and Service Development

American Social History Online has exceeded target collection size in number of objects represented. Collections include many that the Collections Working Group (CWG) had indentified, as listed in the original grant proposal. In addition, previously unidentified collections were added from Emory University, Columbia University, Harvard University and the University of Illinois at Urbana Champaign (UIUC). The California Digital Library has contributed numerous collections on behalf of a number of academic and public libraries in California. Appendix III lists the collections currently available through the aggregation. American Social History Online collections are predominately images of primary source material. However, the material from UIUC includes textual material from their Open Content Alliance digitization project and Emory University is contributing material from Southern Spaces, an online journal. Additional types of material are introduced through the federated search solution, which brings in a variety of journal and book content, both commercial and open access, by automatically launching a panel labeled “Additional Resources of Possible Interest” on each search results page.

The American Social History Online Web site offers standard simple and advanced search functions. Rules for field indexing and results displays were established collaboratively by the Services and Metadata Working Groups. The architect and developer implemented the rules, the data analyst checked the implementation and the working group members tested and reported bugs using the SourceForge site. The data analyst has completed a final quality check on the implementation, logging her results on the wiki for adjustment by the architect and developer in the next month.

The Web site is integrated with the DLF collections registry hosted by UIUC, which offers the ability to browse by collection and view the topics each collection contains as a “cloud.” The Web site offers personalized services for users who log in using OpenID, including the ability to save searches and an innovative feature that allows the user to suppress results s/he has seen before. In addition to adding collections, the core team plans to add options to browse by date,
topic and place to the front page of the Web site. The browse panel will replace the blog feed that currently occupies the right panel of the home page. This work will be completed by DLF Spring Forum in April, 2008.

The *American Social History Online* site was registered with Google Analytics October 20th, 2007. Since then, Google has been crawling the Web site aggressively, and records have been pulled by Google and others over 3.8 million times. A site map for Google to crawl has been implemented and will be deployed in the next month.

A comparison of Google page rank was done between December 6, 2007, and March 6, 2008. The search terms “American Social History Online” and “American Social History” were used with the Google search engine on both of these dates. During that time the Web site moved from listed as 6th on the first results page to 1st, from a total of 10 listings per page. Total listings for the first results page relevant to the American Social History Online project went from 3 out of the 10 listings to 7 out of 10 listings.

Future efforts for SEO will be focused on increasing page ranks for keywords used when searching, increasing visits, and additional analysis of traffic sources. Analysis of log data on both the portal and a selection of contributing repositories’ native web interfaces have also been initiated for assessment.

Zotero was implemented as the *American Social History Online* citation management tool. The development team implemented the unAPI protocol, which was selected from three options: 1) write a custom Zotero translator, 2) use COinS, or 3) use unAPI. A custom Zotero translator was quickly eliminated as being the most complex of the solutions, so the development team initially implemented COinS. This approach was limited because it is not possible to embed all of the data needed, such as abstracts, into an OpenURL ContextObject, which forms the foundation for COinS. The development team then implemented unAPI, which allows Zotero to ingest complete MODS records. The team has discovered limitations with the Zotero MODS translator which they are working with the Zotero developers to resolve, but overall, the protocol was easy to implement and the functionality it provides is satisfactory.

The Aquifer “asset action” experiment is incorporated into the Web site for selected collections, enabling scholars to create personal collections of images using the Collectus digital object collector tool from University of Virginia, which has been integrated into *American Social History Online*. Both the Technology Working Group (TWG) and the development team are working to transform the experiment into a production level service. Their work is closely linked with the Open Archives Initiative Object Reuse and Exchange (OAI/ORE). Tim Cole, who is on the Aquifer TWG participates in an OAI/ORE advisory group and acts as a liaison between the two. The TWG will sponsor an open discussion session at the DLF Spring Forum in Minneapolis in April to get community feedback on their work.
PLANNING TO SUSTAIN

“DLF initiatives change with needs; as some projects come to fruition or find new support, the DLF invests in others, staying flexible as a catalyst for experiment and change.”2 From the DLF perspective, the Aquifer initiative is becoming mature. The communities of practice that Aquifer nurtures, and many of the services that Aquifer has developed through American Social History Online, are worth sustaining and, in some cases, developing further. Exploratory conversations among members of the core team, the AIG, with participant library directors, and with colleagues who have managed organizational transitions for other projects are underway. In addition to the continued development and the assessment activities that will take place in the second year of the grant period, a plan to transition both Aquifer and American Social History Online to other organizational hosts will be made and effected. The goal is to complete the transition by March 2009.

BUDGET REPORT

The project has made effective use of resources and is on track with expenditures. The first year proposed budget anticipated expenditures at the $461,472 level. As of the end of February, 2008, $284,688 had been expended. The gap between projected and actual expenditures reflects delayed billing from subcontractors. When DLF payment to subcontractors reflects costs through March, 2008, expenditures will align with projections.

Expenditures are largely in line with the budget plan submitted in the grant proposal. Slight changes from the original budget plan include: a small contract with the user-interface design firm, Citrus Studios, substituted for .50 FTE of a data analyst’s time and subcontracts for local SEO and Zotero integration, and interest earned on the original grant allocation, which will be used to pay a service contract to UIUC for an American Social History Online slice on a new, robust server, which replaced the donated server that would not have met performance requirements over time.

CONCLUSION

In the first year, American Social History Online has remained ahead of schedule and on budget. That both scholars interested in digital scholarship and the digital library community are following American Social History Online development with interest is evidenced by the high level of acceptance for proposals to share information about Aquifer and American History Online. Members of the working groups and core team have given, or will soon give, presentations or poster sessions at DLF Forums, the Coalition for Networked Information (CNI) Task Force Meeting, Open Repositories 2008, the National Council of Public History Annual Meeting, the Organization of American Historians Annual Meeting, the National Popular Culture and American Culture Association Conference, the International Association for Social Science Information Service & Technology Annual Meeting, and the 2008 Library Assessment Conference. The Aquifer Metadata Working Group (MWG) has been invited to submit an article to the new Journal of Library Metadata on the “DLF Aquifer MODS Guidelines,” and the

*American Social History Online* Web site has been accepted as a “Digital Library of the Week” to be featured by *American Libraries Direct*.

The systems architect, Chick Markley is preparing to leave the project, having completed the terms of his contract. He has created an open and flexible architecture, leaving the remaining team members with an excellent framework within which to work. We are confident that the project will continue to develop successfully in its second year, and the assessment activities will produce interesting and worthwhile results, leading to a sustainable future for both Aquifer and *American Social History Online*.

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APPENDIX I: AGILE ASSESSMENT SCRIPT

I hope everyone has had the opportunity to investigate the prototype of the website for the Aquifer American Social History Online project. The purpose of this call is to identify the kinds of things you would want to do while using this website. This website is a draft, so please don't limit your suggestions to things available on the site now. Tell us what you'd like to be able to do, even if you haven't seen it on this website or on another web site. Our objective is to understand your research tasks and objectives. For example:

- What types of things are you typically trying to find?
- How would you go about doing exhaustive research on a topic within your area of expertise?
- How does this searching fit into your larger goal (e.g., writing your dissertation, writing a paper, teaching a class, putting together a presentation)?
- What are some sample searches you've done recently?

In your work with us today and over the coming weeks, we are interested in hearing the full range of ideas and scenarios that occur to you. Don't worry about the quality of each individual idea you bring to us--our main goal at this point is to document the full range of ideas that come to you. You will have a chance to tell us which ideas are the most useful to you as we move forward. As we begin our brainstorming session, we would like to begin with basic tasks ("I would like to search for images") and then move from there to progressively more complicated tasks ("I would like to search for images from the depression era"). Ideally, these tasks will be related. Think about your teaching and research and walk us through your conceptual workflow and we will try to build the prototype up iteratively during the brainstorming session.

I will be taking notes as you throw out your ideas and I will send the list to you for your comments and for you to prioritize after the call. As we talk about your ideas, I'll be asking you the following:

- What would you want to do next?
- What mistakes could you make here?
- What could confuse you at this point?
- What additional information could you need?
- Would anyone like to start?

Jump-start question: "Tell me how you would prepare to research a paper?"

End of session: Thank you, everyone, for your ideas. I will be writing these up and sending them out to you for you to prioritize and comment on. We will be contacting you every other week from now until the end of October. I'll send you an email notifying you when upgrades have been made to the website. We'd like you to keep trying out the website after every upgrade is made so as to give us feedback. Of course, you can access the website and test it anytime, as well as send us feedback any time. The two-week time schedule is for us to keep track of the development. We're also going to be adding to the collections during this two-month period. If there are already collections that you know about that are digitized, or that you think should be included in the project, please let us know. Please contact me if you have any questions at any time.
APPENDIX II: EARLY ASSESSMENT PARTICIPANTS

EMORY
Robin Conner* **
Ph.D. Candidate
Department of History
Emory University

MICHIGAN
Laura Ferguson **
Ph.D. Graduate Student
19th Century United States; Social; Gender
University of Michigan

NYU
Karen Kupperman, Ph.D. **
Julius Silver Professor, Early Modern Atlantic World
New York University

STANFORD
Benjamin Stone* **
Curator for British and American History
Stanford University

UCLA
Marta L. Brunner, Ph.D. **
Librarian for English and American Literature and Comparative Literature
University of California, Los Angeles

UIUC
Mary Stuart
History and Philosophy Librarian
University of Illinois at Urbana-Champaign

YALE
Gregory Eow
Kaplanoff Librarian for American History and American Studies
Yale University

Bill Landis
Manuscripts and Archives
Yale University

*Contributed to the original grant proposal by offering ideas about how the aggregated collections could answer research problems or create new scholarship.
**Participated in initial agile development conference call
APPENDIX III: AMERICAN SOCIAL HISTORY ONLINE COLLECTIONS

Courtesy of California Digital Library (CDL) (27855 total records from all contributors)
- Albany (CA) Library: Historical Photograph Collection
- Anaheim Public Library: Photograph Collection on Anaheim Local History
- San Bernardino Public Library: Historical Treasures of San Bernardino
- San Francisco Performing Arts Library & Museum: Chinese Theater Images in California
- Santa Ana Public Library: Santa Ana History Room Photograph Collection
- Society of California Pioneers: Collection of Autobiographies and Reminiscences of Early Pioneers
- UC Berkeley, Bancroft Library:
  - The 1906 San Francisco Earthquake and Fire Digital Collection
  - De la Guerra Family Photographs
  - Disabled Students' Program Records, 1965-
  - Drawings of Indians and California Scenery
  - George and Phoebe Apperson Hearst Papers
  - Herbert Willsmore Papers, 1968-1993
  - James Ralston Caldwell Papers
  - Land Case Maps Collection
  - National Association for the Advancement of Colored People, West Coast Region Photographs, ca. 1946-1970
  - Papers Relating to the Loyalty Oath Controversy, University of California, 1949-1956
  - Photograph Collection of Family Members and Descendents of General M.G. Vallejo
  - Records of the National Association for the Advancement of Colored People, Region I
  - San Francisco News-Call Bulletin Newspaper Photograph Archive
- UC Berkeley, Environmental Design Archives: St. Francis Wood Virtual Collection
- UC Berkeley, Environmental Design Archives: William W. Wurster/Wurster, Bernardi & Emmons Collection, 1922-1974
- UC Berkeley, Ethnic Studies Library: Chung Sai Yat Po Newspaper Collection
- UC Berkeley, University Archives: Records of the Committee on Academic Freedom During the Loyalty Oath Controversy
- UC Berkeley, Water Resources Center Archives: Joseph Barlow Lippincott Papers, 1882-1942
- UC Irvine, Special Collections and Archives:
  - Anne Frank Photographs
  - Brigitte Marshall Collection on Southeast Asian Refugees
  - Collection on Refugee Forums
  - Fort Chaffee Photographs
  - Gayle Morrison Files on Southeast Asian Refugees
• Linda Vo Collection on the Southeast Asian American Experience Archive Project
• Ly Kien Truc Photographs of the Hi-Tek Demonstrations
• Mitchell I. Bonner Photographs and Ephemera
• Mitsuye Yamada Papers
• Orange County California Families Portrait Photograph Album
• Orange County Manuscript Maps
• Orange County rancho Title Abstracts
• Paul Tran Files on Southeast Asian Refugees
• Pleasants Family Papers
• Robert Walsh Files on Southeast Asian Refugee Resettlement and Education
• Southeast Asia Resource Action Center Records
• Southeast Asian Archive Vertical File Collection
• Southeast Asian Genetics Program Records
• Van Le Files on Southeast Asian Refugees

• UC Los Angeles, Fowler Museum of Cultural History:
  - Baja California (Paipai) Indian Archaeological and Ethnographic Collections 1955-1959
  - California Indian Baskets ca. 1800s-1900s
  - Southern Coastal California (Chumash & Gabrielo) Indian Archaeological Collections

• UC Los Angeles, Special Collections, Young Research Library:
  - Alice Greenfield McGrath Papers
  - Augustus F. Hawkins Papers
  - Brian Urquhart Collection on Ralph J. Bunche
  - California Ephemera Collection
  - Edward Ross Roybal Papers
  - Estelle Ishigo Papers
  - Grace M. Thomas Collection on Ralph J. Bunche
  - Los Angeles Daily News Negatives Collection
  - Los Angeles Times Photographic Archive
  - Los Angeles Urban League Records
  - Manzanar War Relocation Center Records
  - Map Collection on Los Angeles, California, the United States and the World
  - Pamphlet Maps Collection on California
  - Ralph J. Bunche Papers
  - S. Guy Endore Papers
  - Sleepy Lagoon Defense Committee Records
  - Southern California Cadastral and Tract Maps Collection
  - Underground, Alternative and Extremist Literature Collection

• UC Los Angeles, University Archives: Biographical Files (Reference Collection)
• UC San Diego, Mandeville Special Collections Library: Ben Yellen Papers, 1945-1994
• UC San Diego, Mandeville Special Collections Library: Estado que Manifiesta el que Tenian las Misiones de la Antigua California
• UC San Francisco, Tobacco Control Archives: Asian/Pacific Islanders Tobacco Education Network Records
• UC San Francisco, Tobacco Control Archives: Tobacco Free Project, San Francisco Dept. of Public Health Records
• UC Santa Barbara, California Ethnic and Multicultural Archives: Centro Cultural de la Raza Archives Catalog of Slides
• UC Santa Barbara, California Ethnic and Multicultural Archives: Galeria de la Raza Archives Catalog of Slides
• UC Santa Barbara, California Ethnic and Multicultural Archives: Lucero, Linda Collection of La Raza Graphics/La Raza Silkscreen Center
• UC Santa Barbara, California Ethnic and Multicultural Archives: Ochoa, Victor Papers
• UC Santa Barbara, California Ethnic and Multicultural Archives: Prigoff, James Collection
• UC Santa Barbara, California Ethnic and Multicultural Archives: Royal Chicano Air Force Archives
• UC Santa Barbara, California Ethnic and Multicultural Archives: Self-Help Graphics Archives
• UC Santa Cruz, Special Collections and Archives: Helen Hosmer Papers

Columbia University
• The Papers of John Jay (11921 records)

Emory University
• Southern Spaces (62 records)

Harvard University
• Immigration to the United States (1789-1930) (11576 records)
• The Poet's Voice: A Digital Poetry Collection (21 records)
• Women Working (1800-1930) (4215 records)

Indiana University Digital Library Program OAI Data Provider
• Charles W. Cushman photograph collection (14425 records)
• Sam DeVincent collection of American sheet music (6762 records)
• Starr sheet music collection (416 records)

Library of Congress Open Archive Initiative Repository 1
• African American Photographs Assembled for 1900 Paris Exhibition (481 records)
• American Notes: Travels in America (books) (254 records)
• Ansel Adams's Photographs of Japanese-American Internment at Manzanar (244 records)
• Brady-Handy Collection (Photographs) (4993 records)
• California As I Saw It (books) (186 records)
• The Capital and the Bay: Narratives of Washington and the Chesapeake Bay Region (books) (135 records)
• Cartoon Prints, American, 1766-1876 (573 records)
• Civil War Photographs (7130 records)
• Color Photographs from the FSA-OWI, 1939-1945 (1615 records)
• Curtis (Edward S.) Collection (Photographs) (1070 records)
• George Grantham Bain collection (photographs) (41449 records)
• Gottschoc-Schlesnser Collection (Photographs) (29007 records)
• John C. H. Grabill Collection (Photographs) (190 records)
• Johnston (Frances Benjamin) collection (photographs) (1710 records)
• Lawrence & Houseworth Collection (Photographs) (904 records)
• LC Early Motion Pictures (617 records)
• LC Maps (6670 records)
• LC Panoramic Photographs (4213 records)
• LC Printed Ephemera Selections (10159 records)
• LC Sheet Music (62976 records)
• Lomax Collection of Photographs Depicting Folk Musicians (402 records)
• National Child Labor Committee Photographs (5131 records)
• National Photo Company Collection (2974 records)
• Spain, the United States, and the American Frontier (books) (32 records)
• StereoGraph Cards Collection [not on original grant list] (7318 records)
• Theodor Horydczak Collection (Photographs) (14322 records)
• World War I Posters (1862 records)
• WPA Posters (921 records)
• Wright Brothers Negatives (303 records)

University of Illinois at Urbana Champaign Digitized Books
• 1893 Chicago World Columbian Exposition (27 records)
• Abraham Lincoln (259 records)
• American History (24 records)
• Champaign County (10 records)
• Chicago (396 records)
• Church History in Illinois (30 records)
• County and Local Histories (Illinois) (114 records)
• Education in Illinois (25 records)
• Genealogy Resources (56 records)
• Illinois Art and Literature (21 records)
• Illinois History and Culture (529 records)
• Immigration and Emigration (21 records)
• Labor and Social Reform Movements (45 records)
• Military History (63 records)
• Natural Resources (25 records)
• Notable Illinoisans (69 records)
• Railroad History (56 records)
• Rural Life and Agriculture (24 records)
• University of Illinois (1 record)
University of Michigan University Library Digital Library Production Service
  • The Collected Works of Abraham Lincoln (12 records)
  • Michigan County Histories (324 records)
  • Making of America Books (8294 records)
  • Public Papers of the Presidents of the United States (75 records)
  • Transportation History Collection: Railroads (6 records)

University of Pennsylvania: A Celebration of Women Writers
  • Americana only (126 records)

University of Tennessee Libraries
  • The Emancipator (7 records)
  • From Pi Beta Phi to Arrowmont (852 records)