

## Abstract

**Project Title:** Imaging Pittsburgh: Creating a Shared Gateway to Digital Image Collections of the Pittsburgh Region

**Description of Project:** An academic library, a museum, and a historical society will establish an innovative collaborative environment to enhance their services to the public by creating a single Web gateway to nationally significant collections of visual images of the Pittsburgh region. The University of Pittsburgh's Archives Service Center, the Historical Society of Western Pennsylvania, and the Carnegie Museum of Art will work together to make their collections accessible via a Web gateway created and managed by the University's Digital Research Library. This partnership will allow a diverse group of institutions to share professional expertise and collections of importance, resulting in better communication between the institutions and better service to their community of users. The selected collections depict Pittsburgh's large immigrant workforce, its steel industries, its public schools, its civic "renaissance" of the mid-1940s and 1950s, and its African-American communities.

The project is structured to achieve four primary goals:

1. *Provide content partners with the tools and skills necessary to better manage, control and administer collections of visual images.* Each content partner will perform item-level cataloging of its visual images according to a defined metadata scheme.
2. *Increase public access to significant collections of visual images of the Pittsburgh region located in diverse repositories in the city.* Because the photographic collections are scattered throughout multiple institutions in Pittsburgh, converting them to an electronic format will succeed in alerting the public to the existence of these holdings and will provide an alternative means of accessing the images through a single Web gateway.
3. *Administer the integration of distributed visual image collections and provide tools for searching and analysis.* Users will benefit from the ability to search and retrieve images across multiple collections curated by several institutions.
4. *Promote the meaningful use of the digital collections.* Users of the digital collections will further advance their knowledge of the visual history of Pittsburgh and surrounding region. They will benefit from the aggregated gateway by creating new knowledge in the form of scholarly research.

Working with the Historical Society and the Archives Service Center for the last three years, the Digital Research Library has created the 'Historic Pittsburgh' project. This collaboration has resulted in increased public access to significant collections of historic material documenting the growth and development of Pittsburgh and the surrounding western Pennsylvania region during the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Our proposed project will extend and amplify upon 'Historic Pittsburgh' through the formation of a broader partnership and the addition of photographic images.

In conjunction with the Project Consultant, the Digital Research Library will create guidelines for metadata creation, scanning, and quality control for content partners to follow when capturing their digital images. The Digital Research Library will index the descriptive records as exported from the databases in SGML, and mount and serve the images from a Web gateway offering cross-collection searching and retrieval.

**Anticipated Results:** At the end of the 24-month project, the team will have created a Web gateway for the public to access nationally significant image collections from multiple institutions. Furthermore, each institution will have gained significant control and management of its image collections through item-level cataloging. Finally, the project will result in the creation of a sustainable, collaborative network that will support future additions to the online collections and draw new local and regional participants.

## **Imaging Pittsburgh: Creating a Shared Gateway to Digital Image Collections of the Pittsburgh Region**

**Project Mission:** To establish an innovative collaborative environment where an academic library, a museum, and a historical society enhance their services to the public by creating a single online Web gateway to nationally significant collections of visual images of the Pittsburgh region.

### **Introduction**

The World Wide Web has revolutionized the communication and dissemination role of libraries and museums by extending their services to a “virtual” community of users. Digital technology enhances the useful functionality of images, provides convenience to users, serves as a preventative preservation method, aggregates collections that are physically dispersed, and greatly expands the reach of the collections.<sup>1</sup> As libraries and museums establish online presences and mount high-quality digital content, however, resources can be exhausted at a considerable rate. Typically, each institution looks inward to address this expectation, but recently libraries and museums have embraced collaborative projects in an attempt to pool expertise and share resources.<sup>2</sup> This sentiment is echoed in a recent report published by the Council on Library and Information Resources: “Given the resources that must be dedicated to creating digital collections and the resources it takes to build the infrastructure that allows access to them, it would seem that the only way to build truly scalable collections is through some cooperative effort.”<sup>3</sup>

Working with the Historical Society of Western Pennsylvania for the last three years, the University of Pittsburgh’s Digital Research Library has created the ‘Historic Pittsburgh’ project which successfully delivers texts, map images, encoded archival finding aids, bibliographies, and databases.<sup>4</sup> This project increases public access to significant collections of historic material documenting the growth and development of Pittsburgh and the surrounding western Pennsylvania region during the 19<sup>th</sup> and early 20<sup>th</sup> centuries.

Coordinated by the Digital Research Library, our proposed project will extend and amplify ‘Historic Pittsburgh’ through the formation of a partnership among the Carnegie Museum of Art, the Historical Society, and the University of Pittsburgh’s Archives Service Center to describe and digitize selected collections of photographic images and make that information available to the public via a central online gateway. Adding image content will increase the comprehensiveness of the ‘Historic Pittsburgh’ website as a research tool. Furthermore, our project will allow a diverse group of partners to share professional expertise and collections of importance, resulting in better communication between the institutions and better service to their community of users.

### **Project Goals**

The overall purpose of the proposed project is to create a single online resource for the public to access approximately 7,000 visual images from the collections of multiple cultural heritage institutions. We propose to accomplish this by selecting important image collections curated by each partner, cataloging the image collections in electronic databases according to defined metadata

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<sup>1</sup> Ostrow, Stephen E., Digitizing Historical Pictorial Collections for the Internet, Report commissioned by the Council on Library and Information Resources, February 1998. Available online at <http://www.clir.org/pubs/reports/ostrow/pub71.html>.

<sup>2</sup> Colorado Digitization Project (<http://coloradodigital.coalition.org/>), Making of America (<http://moa.umdl.umich.edu/>), Illinois Digital Cultural Heritage Community (<http://images.library.uiuc.edu/projects/dchc/>), Denver Public Library (<http://gowest.coalition.org/>).

<sup>3</sup> Smith, Abby, Strategies for Building Digitized Collections, Report commissioned by the Digital Library Federation and the Council on Library and Information Resources, September 2001, p. 21. Available online at <http://www.clir.org/pubs/abstract/pub101abst.html>.

<sup>4</sup> <http://digital.library.pitt.edu/pittsburgh/>.

standards, digitizing selected images from the identified collections, indexing and mounting the image collections from a central server, and creating a Web gateway with the functionality of cross-searching the multiple image collections.<sup>5</sup> The fundamental goals and related objectives, along with expected outcomes, are stated below:

- Goal 1:** Provide content partners with the tools and skills necessary to better manage, control and administer collections of visual images.
- Objective 1:* Perform item-level cataloging of image collections in an electronic database according to defined metadata standards.
- Outcome: Each content partner will gain significant control and management of its image collections through item-level cataloging of selected photographs.
- Goal 2:** Increase public access to significant collections of visual images of the Pittsburgh region located in diverse repositories in the city.
- Objective 1:* Create high quality digital files of selected photographs that can be used for a variety of service and internal needs.
- Objective 2:* Design a Web gateway that facilitates the search and retrieval of images from across all the collections.
- Outcome: The selected collections will be more accessible to each content partner's primary community of users as well as to new audiences. The collections will gain added value through their aggregation on the Web gateway.
- Goal 3:** Administer the integration of distributed visual image collections and provide tools for searching and analysis.
- Objective 1:* Develop a system for the production and delivery of digital objects from content partners.
- Objective 2:* Index and mount the image collections from a central server.
- Objective 3:* Prepare metadata for harvesting through the Open Archives Initiative protocol.
- Outcome: Project partners will develop a sustainable network that will support future additions to the online collections as well as draw new local or regional participants.
- Goal 4:** Promote the meaningful use of the Web gateway.
- Objective 1:* Develop mechanisms to facilitate use of the Web gateway to augment outreach and educational programs by the content partners.
- Objective 2:* Develop promotional programs that encourage innovative uses of the Web gateway among a broad audience.
- Outcome: Users of the Web gateway will further advance their knowledge of the visual history of Pittsburgh and surrounding region. They will benefit from the aggregated gateway by creating new knowledge in the form of scholarly research.

## The Collections

The image collections visually document the cultural, educational and social development of the city of Pittsburgh, as well as depict the vast infrastructure and industry of the region.<sup>6</sup> The collections primarily contain monochrome prints and negatives, and have received minimal (if any) item-level cataloging attention. The collections are legally owned by each of the participating institutions, and therefore may be electronically reproduced for viewing and distribution on the World Wide Web.

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<sup>5</sup> See Attachment 1, "Project Partners: Roles and Benefits."

<sup>6</sup> See Attachment 2, "Description of the Photographic Collections" for more information about the individual collections.

The Archives Service Center at the University of Pittsburgh will catalog and digitize images from a number of historic archival image collections. Collectively, the images provide a rare and comprehensive view of the history and social development of a single, urban industrial society through numerous, yet distinct perspectives. Photographers representing corporate, government, intellectual, charitable, and artistic perceptions have documented the various physical and social components of Pittsburgh's evolution, including its landscape, infrastructure, corporations, civic institutions, class structures, ethnic populations, and daily urban life.

The Carnegie Museum of Art will catalog and digitize photographs from the recently acquired Teenie Harris Archive. This collection is possibly the richest and most complete visual record of 20<sup>th</sup>-century African-American urban life in a public institution. It contains hundreds of vintage prints and more than 75,000 negatives, including historic images of the Civil Rights movement, jazz musicians, sports heroes, and community life in Pittsburgh's black neighborhoods from ca.1935-1970. Harris' news photographs for the Pittsburgh *Courier*, the African-American newspaper with national and international circulation, portrayed history-in-the-making on a daily basis. A smaller group of Pittsburgh photographs by other artists from c.1850 to 1950 will provide an overview of the Museum collection.

The Historical Society will catalog and digitize photographs that represent the most unique and well-documented images from its many collections. Many of the images depict Pittsburgh's large immigrant workforce and reveal the social customs, living conditions, trade associations, and educational opportunities of these communities. Other collections illustrate Pittsburgh's growth as it exited the boom of World War II industrial demands and entered its first "renaissance" in the mid-1940s and 1950s with the rebuilding of the downtown area. The collections represent a microcosm of the people of any industrial city in their activities of working, learning and building during these time periods.

### **National Impact**

This project addresses the dissemination on the World Wide Web of diverse and scattered image collections through a collaborative model of centralized access.<sup>7</sup> The project is important for four reasons: the content, the nature of the partnerships, the opportunity to reach new users, and the successful application of shared digital library technology.

This project will become a primary resource for the history of the Pittsburgh region, an archetypal city for the study of industrialization, immigration, and urban renewal. Pittsburgh's extraordinary history has been well documented in photographs since the mid-nineteenth century. As a major stop on the roads and waterways leading West, as the greatest steel producer of the nineteenth and early twentieth centuries, and as an ambitious pioneer in urban reform and renewal since the 1950s, Pittsburgh has played a crucial role in the history of the United States.

This project will have national impact by providing a model for collaborations among institutions with different missions and audiences. A university research library, a fine arts museum, and a regional historical society have rarely participated on a joint initiative of such scope and interdependence. This partnership reveals the power of a thematic approach (in this case the history of the Pittsburgh region) and digital technology to cross institutional boundaries and unite disparate collections with a variety of audiences. By working collaboratively, project partners will address many of the obstacles that libraries and museums face when mounting image collections for the Web, namely the lack of fundamental skills, experience, infrastructure, and software to implement such plans.

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<sup>7</sup> See Attachment 5, "Letters of Support"

This project will demonstrate how cultural institutions can partner on the World Wide Web in order to reach new audiences. Each partner institution serves specialized audiences: the University of Pittsburgh primarily serves academic researchers; the Carnegie Museum of Art serves art lovers, cultural tourists, and schools; and the Historical Society serves historians, independent researchers, and schools. By creating a Web gateway, each organization will expose its collections to new users. Academic researchers accustomed to the University's Digital Research Library will discover the collections at the Museum of Art, while the Historical Society's outreach and school programs will introduce a broader public to the resources of the University and Museum. Furthermore, these images will add significant, valuable and trustworthy content to the digital environment. The project partners share IMLS's belief that "the context of content is a vast international network of digital materials and services. Objects, metadata and collections should be viewed not only within the context of the projects that created them but as building blocks that others can reuse, repackage, and build services upon."<sup>8</sup>

This project will demonstrate that shared digital library technology can be implemented successfully to solve specific local problems. Access to images at the participating institutions has been limited because only curators hold detailed knowledge of the collections, and patrons have not had access to databases describing collection content. However, the digital library community has developed tools to facilitate the creation and sharing of collection content. This project will show the feasibility of creatively applying standardized digital library technologies, while creating interoperable resources that can be indexed by the larger digital library community.

## **Design**

There are four critical elements to our design: the creation of a shared resource, genuine and substantial collaboration, work patterns that will bring change to each institution, and adherence to standards.

The audience for this project will build upon and extend the existing user base of each participating institution, including users of the 'Historic Pittsburgh' website.<sup>9</sup> These users face challenges when accessing visual collections documenting the growth and development of Pittsburgh and the surrounding region. Even if each institution provided online access to its own image collections independent of this project, users would still face the obstacles presented by differing interfaces, metadata schemes, selection strategies, and lack of interoperability. This project is fundamentally designed to address these problems through the creation of a shared resource: a Web gateway that will allow cross-collection searching from a single interface and access to images with consistent cataloging information.

This project will require true collaboration at many stages, rather than partners working exclusively within their traditional institutional boundaries (i.e., museums, libraries, and archives). At the outset, project team members will act in unison to create guidelines for digitization and description, develop quality control measures, and participate in training workshops. Collaboration on shared selection criteria is particularly critical to this project because it allows the formation of a cohesive cross-institutional resource. As Abby Smith writes, "The idea of coordinated collection development of digital objects is a powerful one."<sup>10</sup>

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<sup>8</sup> A Framework of Guidance for Building Good Digital Collections, Draft report commissioned by the Institute of Museum and Library Services, November 6, 2001. Available online at <http://www.ims.gov/pubs/forumframework.htm>.

<sup>9</sup> Results of a recent user survey indicate that adding images to the 'Historic Pittsburgh' website should be the number one priority. See Attachment 3, "Historic Pittsburgh Survey Results: Question 9."

<sup>10</sup> Smith, p. 21.

As a result of genuine collaboration, the content partners expect (and welcome) changes to their work pattern as they catalog and digitize image collections in a production environment. Moreover, the collaboration will affect change across institutional boundaries since three diverse cultural heritage repositories are represented in this proposal. The Digital Research Library will also adapt to new procedures, formats and delivery mechanisms.

Our project will adhere to widely held image creation and formatting standards.<sup>11</sup> It will implement the Dublin Core metadata element set for encoding descriptive information. The delivery of the images to the user will model the successful University of Michigan's DLPS Image Collection website. An important design element of the workflow is to utilize batches; this will enable the project team to perform their work in manageable segments, quickly identify problems in the workflow, and apply corrective measures.

## **Project Overview**

The content partners (Carnegie Museum of Art, Historical Society, and the University of Pittsburgh) have identified several collections that they are most interested in cataloging and making available online. Content partners are specifically interested in establishing an online presence that will promote their nationally significant collections.

Content partners will collaboratively determine the selection criteria within the collections. With guidance from the Project Consultant and the Digital Research Library, content partners will investigate and implement a metadata scheme that best suits their practices, incorporating required elements to enable cross-collection searching. Subsequently, content partners will create item-level descriptions for the images within the collections using database tools developed by the Digital Research Library. Then, the content partners will digitize selected images from the collections. The Digital Research Library will index the records as exported from the databases in SGML, and mount and serve the images from a central gateway. The above steps will occur in periodic batches to benefit the workflow and ensure that problems or necessary changes are regularly identified. Content partners will integrate the Web gateway created by this project into their respective institutional websites.

## **Management Plan**

### *Selection Criteria*

Image selection criteria will be based on access, content, and preservation considerations.<sup>12</sup>

To enhance access, the curator at each institution will select images that are repeatedly requested by researchers or images that have significant scholarly value, but are underutilized by researchers. Present access to the photographic collections is limited because of physically remote location (Archives Service Center) or a user fee (Historical Society). The digitization of the photographs will result in their "democratization" by providing more open and public accessibility.

Selection based on content will help to build a virtual collection that combines a significant volume of material with comprehensiveness. Curators will establish several themes that reflect the contents and strengths of the collections, including: Infrastructure, Business & Industry, Education, Immigrant

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<sup>11</sup> Greenstein, Daniel and George, Gerald, Digital Reproduction Quality: Benchmark Recommendations, *RLG DigiNews*, August 15, 2001. Available online at <http://www.rlg.org/preserv/diginews/diginews5-4.html#featured>.

<sup>12</sup> Stefano de, Paula, Selection for Digital Conversion, *Moving Theory into Practice: Digital Imaging for Libraries and Archives*, Kenney, Anne R. and Rieger, Oya Y., eds., Research Libraries Group, 2000, pp. 11-23.

Experience, and Culture. Collections representing particular institutional strengths will be digitized en masse. For collections that are impractical to completely digitize, curators will select images according to the themes listed above and which they believe will most benefit current and future research interests.

Selection based on preservation will influence the criteria. Curators will choose images that can withstand the stress and handling of the digitization process. Nonetheless, images that are in imminent danger of further deterioration due to excess handling and use will be primary candidates for digitization.

### *Guidelines and Training*

One of the first components of the project will be the creation of guides and workflow recommendations. Working with the Project Consultant, all members of the project team will create a set of guidelines and workflow recommendations for creating administrative, structural, and descriptive metadata, for digitizing procedures and for quality control measures. In particular, staff of the Digital Research Library, Museum Technologist, and Project Consultant will examine, reconcile, and incorporate best practices established by other digital imaging projects. Content partners will play a key role communicating their particular needs and describing how new processes interact with existing procedures. Training workshops will be conducted at the University of Pittsburgh by the staff of the Digital Research Library, Museum Technologist, and Project Consultant during the first few months of the project.

### *Cataloging*

Proper cataloging will be key to ensuring that this project meets its stated objectives. When compared with the act of scanning, “cataloging and indexing of digital images are arguably even more essential in order to provide effective online delivery and retrieval mechanisms.”<sup>13</sup> Content partners recognize the important commitment each must make to properly describe the resources in their collections. This process starts by understanding the significance of establishing an appropriate metadata scheme. Following the project guidelines, curators and catalogers from each institution will develop metadata elements that are based on particular needs or institutional practices. Each metadata scheme developed will include a crosswalk to all 15 elements of the Dublin Core enabling the exposure of metadata to facilitate resource discovery (e.g., the Open Archives Initiative).<sup>14</sup>

The Historical Society and the Archives Service Center do not already implement a database management system for image collections; therefore, the Technical Librarian at the Digital Research Library will develop databases for each institution using Microsoft Access. The benefits of using Access are threefold: each institution already licenses it; project team members are already familiar with it; and data stored in Access can be exported to the Digital Research Library as a flat file. The Technical Librarian will create templates for the data entry portion of the project. The Carnegie Museum of Art currently maintains a database management system; the Museum Technologist will export their database as a flat file.

Cataloging will be the most time consuming aspect of this project, and therefore the most expensive. Imaging technicians hired at each institution will perform basic cataloging tasks under the guidance of curators and catalogers, who will also create subject indexes and proof the data.

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<sup>13</sup> Graham, Margaret E., *The Cataloging and Indexing of Images: Time for a New Paradigm?*, *Art Libraries Journal*, 2001 (26) 1, p. 22.

<sup>14</sup> Lynch, Clifford A., *Metadata Harvesting and the Open Archives Initiative*, ARL Bimonthly Report 217, August 2001. Available online at <http://www.arl.org/newsltr/217/mhp.html>.

## *Digitization*

The following digital image files will be created: an archival master, a production master, an access image, and a thumbnail. The content partners will be responsible for creating the archival master and production master images; the Digital Research Library will receive the production masters and create the derivative images. The Project Director will ensure the delivery of each batch adheres to the Schedule of Completion. Each content partner is responsible for the long-term storage and preservation of their archival master images.

The content partners have chosen to create the archival master images in-house to gain experience with digital imaging and to maintain local control over the collections.<sup>15</sup> Imaging technicians at each institution will create the archival master images by scanning photographs according to the workflow guidelines and minimum criteria for image capture written by the Digital Research Library.

The archival master image will serve as a record of the raw capture data and will not be enhanced (e.g., sharpened).<sup>16</sup> Additionally, the archival master image will be of high enough quality to be repurposed by the content partners for a variety of service and internal needs, such as publication and exhibition design.

The following baseline technical specifications are designed to meet the image use goals of the project: archival master files will have a tonal depth of at least 8-bit grayscale, a minimum spatial resolution of 3000 x 2400 pixels, an effective resolution of no less than 300 dpi, and will be saved uncompressed in the TIFF file format.<sup>17</sup> Content partners will have the flexibility to implement higher standards for their master images based on their specific internal needs; nonetheless, the baseline standards ensure the creation of files well-suited to primary project goals.

## *Quality Control*

Curators and catalogers at each institution will proof their catalog records before submitting them to the Digital Research Library. The records will be inspected for the completion of required fields, spelling, and general accuracy.

As part of the imaging workflow, curators, archivists and librarians at each institution will perform an ongoing review of the archival master images. The guidelines created by the Digital Research Library will provide clear statements about assessing the archival master file. Every image will be checked for unintentional clipping, cropping, skewing, and the presence of moiré patterns. The accuracy of the file names will be checked against the catalog record. The imaging technicians at each institution will scan grayscale targets at the beginning of every scanning session to record scanner output, and will frequently calibrate monitors.

## *Mounting the Online Collection*

The Technical Librarian at the Digital Research Library will index, mount and provide access to the multiple image collections from a single gateway by implementing image-class middleware obtained from the University of Michigan.

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<sup>15</sup> See Attachment 4, "Equipment, Software and Supply List" for specifications and costs.

<sup>16</sup> Frey, Franziska S. and Reilly, James M., *Digital Imaging for Photographic Collections: Foundations for Technical Standards*, Image Permanence Institute, 1999, p.36.

<sup>17</sup> See required IMLS form, "Specifications for Projects Involving Digitization."

The Digital Research Library will acquire the production masters and accompanying metadata at regular intervals from each content partner; the imaging technicians at each institution and the Technical Librarian will perform a checksum to ensure the integrity of the files. The Technical Librarian will convert the production master images from TIFFs to access images in the MrSid wavelet compression format and GIF format. The access images will provide the user with sufficient information for viewing, while the thumbnail will be presented with fields from the catalog record to allow users to judge whether they wish to retrieve the higher quality image. All derivative images and metadata will be stored on the Digital Research Library's server; the production master images will be stored offline. The Technical Librarian will convert the exported database records to SGML, which will be indexed and searchable using the XPAT search engine.<sup>18</sup>

To allow users to search and retrieve images across the collections from the Web gateway, the Technical Librarian, in consultation with the project team, will create crosswalks from the metadata schemes to the 15 elements represented in Dublin Core. If a user elects to search only a single collection, then the actual metadata terms defined for that collection will be used.

The Digital Research Library is confident of the scalability of this approach. The University of Michigan uses its own image-class middleware to mount and serve image collections from many campus-related departments. Currently, the university provides cross-collection access to over 125,000 images, and close to 400,000 records.<sup>19</sup>

### *Evaluation*

A graduate student will be hired at the University of Pittsburgh and will work with the Project Director to gather and analyze user data.

### **Adaptability**

The proposed project is designed so that other similar-sized institutions will be able to replicate its model with minimal difficulty. The underlying image access technology is based on middleware distributed freely by the University of Michigan's Digital Library Production Service; the Digital Research Library licenses the search engine and receives support for the middleware. Furthermore, the digital objects created as a result of this project will be SGML and TIFF files, both open standards that are well-supported by many processing applications.

The heart of this project will demonstrate interoperability on two different levels. On the local level specific to this project, curators and librarians from each institution will select an appropriate metadata scheme for their collections, which will address their particular internal needs and requirements. Subsequently, the Digital Research Library will implement the Dublin Core metadata scheme to create crosswalks from the localized scheme to the Dublin Core elements. This will allow for cross-collection search and retrieval by users of the gateway. On another level, the project will expose its metadata to be harvesters using the Open Archives Initiative protocol to allow for greater resource discovery. The metadata assimilated by Open Archives Initiative services can be searched with the content of digital repositories not affiliated with the University of Pittsburgh.

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<sup>18</sup> <http://www.dlxs.org/products/xpat.html>

<sup>19</sup> <http://www.umdl.umich.edu/title-list.html>

## **Project Evaluation**

The Project Director will lead an outcome-based evaluation to determine the results of our project goals. The difficulties of evaluating digital resources have been well documented.<sup>20</sup> Therefore, based on a model outlined by Marchionini, our project has designed an evaluation component that will synthesize the results from several methods to gain an understanding of the project's impact and success.<sup>21</sup>

As soon as the Web gateway is implemented, its use will be tracked, and the Project Director will analyze and provide monthly reports on usage to content partners. Using a Web server log analysis application, the Technical Librarian will extract information about use of the Web gateway. An analysis of the statistics will indicate the level of interest in the various collections, and the preference for searching either across collections or within a single collection.

In Year 2, a graduate student at the University of Pittsburgh will be hired to evaluate the effectiveness of the cataloging practices by conducting both qualitative and quantitative studies. An information retrieval study will test precision and recall using guided searching of the aggregated image catalog. User protocol sessions with selected users will take place at partner institutions and other cultural heritage organizations. These sessions will assist in determining the subjective value of the cataloging information in guiding them to relevant images. Findings from both studies will be summarized in a written report.

In the middle of Year 2, the Project Director will mount an online questionnaire on the Web gateway. The questionnaire will inform the project team about users' identities, information needs, and satisfaction with the gateway. Questions will focus on differences in the experience using the print collections versus their representation in the Web gateway.

Near the end of the project, the Project Consultant will interview all project partners and measure the degree of internal change in each institution as a result of participating in the project. The consultant will then write an evaluation of the attainment of project goals.

## **Dissemination**

The project partners will utilize a variety of formats and forums to inform the library and museum communities about the project. All will pursue articles in professional journals, and seek presentation opportunities at museum and library conferences. Each institution will build access to the Web gateway into their institutional website.

The Archives Service Center will disseminate news and progress of the project by posting updates on its department website and placing announcements in newsletters such as *Views*, the newsletter for the Society of American Archivists' Visual Materials Section. It will also post information on various online discussion groups, including the Visualmat listserv (for visual materials curators) and the AV-Media Matters listserv (for audio visual curators and professionals in the field of audio and visual preservation).

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<sup>20</sup> Jones, Michael L. W., Gay, Geri K, Rieger, Robert H., Comparing Evaluations of Digital Collection Efforts, *D-Lib Magazine*, November 1999. Available online at <http://www.dlib.org/dlib/november99/11jones.html>. Kilker, J., Gay, G., The Social Construction of a Digital Library: A Case Study Examining Implications for Evaluation, *Information Technology and Libraries*, June 1998. Saracevic, Tefko, Digital Library Evaluation: Toward an Evolution of Concepts, *Library Trends*, Fall 2000, 49 (3).

<sup>21</sup> Marchionini, Gary, Evaluating Digital Libraries: A Longitudinal and Multifaceted View, *Library Trends*, Fall 2000, 49 (2), pp. 315-316.

The Historical Society will distribute information through its printed resources, the bi-monthly newsletter *Making History* and quarterly magazine, *Western Pennsylvania History*.

The Carnegie Museum of Art will incorporate the use of the digital collections into school tours and teacher materials, and refer to it in exhibition catalogs and touring and in-house exhibitions.

The Digital Research Library will provide news and updates about the ongoing work and progress of the project on its 'Historic Pittsburgh' news Web page. The Digital Research Library will also contribute periodic articles to the library's Digital Library News monthly online newsletter disseminated to the university community.

### **Sustainability**

The project's success depends upon its maintenance over time, and ongoing communication among the contributing institutions. The project will create a continuing dialogue through which the participating professionals can share technical and collection related expertise. This project will be the basis for further collaborative endeavors with additional institutions.

The University of Pittsburgh has already demonstrated an ongoing commitment to digital library projects through the creation and permanent funding in 1998 of the University Library System's Digital Research Library department. In evidence of its commitment, the University will continue its membership in the University of Michigan's DLXS program indefinitely, thereby maintaining the necessary tools, software and support required to index and mount digital material.

The Digital Research Library will index, mount and serve digital images from the project partners beyond the duration of the grant-funded activities. The workflow procedures established for the creation, description, and serving of digital content will continue to be used by the partners as they augment their digital collections in the future. Content partners agree to give the Digital Research Library permission to host their digital collections for two years after the completion of the grant.

Finally, project partners will share the knowledge and the skills acquired from this project with other area repositories and institutions, which will be invited to contribute content to the Web gateway in the future. In particular, the Historical Society will use the experience gained from this project to better disseminate the image collections of many of its regional historical society affiliates.

### **Personnel**

Project Director – Edward Galloway is Coordinator of the Digital Research Library. He provides leadership for all aspects of the department with overall supervision of the development of hardware, software, digitization contracts, systems licensing, and other administrative aspects of DRL projects. He is project manager for the following collaborative endeavors: 'Historic Pittsburgh,' '19<sup>th</sup> Century Schoolbooks,' and the 'Parallax Project.' He has presented papers and participated on panel discussions on the use of digital technology for preservation and access in archives and libraries at the national, regional, and local level as well as written several articles describing project work.

Technical Librarian – Aaron Brenner is the Technical Projects Librarian in the Digital Research Library. He is responsible for preparing and mounting digital content on the Digital Research Library's Web server, installing and configuring digital library middleware, and developing technical aspects of digital library production. He is experienced at working with digital library content and technologies, including databases, SGML, image files, and CGI programming; and he has successfully developed components of the Digital Research Library's 'Historic Pittsburgh' project.

Production Librarian – Anna Mihalega is the Production Librarian in the Digital Research Library. She is responsible for tracking workflow and overseeing quality control of digital projects; coordinating production work with scanning vendors and other University Library departments; and supervising production staff and student workers. She has experience selecting content as well as creating production and quality control guidelines for the ‘Historic Pittsburgh’ project.

Photograph Curator – Miriam Meislik is Associate Archivist and Photograph Curator for the Archives Service Center where she is responsible for reference, processing, cataloging, and donor relations regarding media collections in the archives. She also acts as the visual editor to local, national, and international authors and documentary filmmakers, helping to select appropriate still and moving images as well as handling all discussions regarding copyright and usage of the media collections. She actively consults with local agencies and private citizens, and lectures on issues of media preservation and storage. She is currently Chair of the Society of American Archivists’ Visual Materials Section.

Archivist/Curator – Stephen Doell is Director of Archives of the Historical Society of Western Pennsylvania and has over twelve years experience in the preservation and cataloging photographs and other archival materials. He manages all of the activities of the archives division including acquisition, processing and cataloging, preservation and access. He is a member of the Academy of Certified Archivists and the State Historical Records Advisory Board for Pennsylvania.

Cataloger – Arthur Louderback is Cataloger at the Historical Society of Western Pennsylvania. He has worked on a Buhl Grant to retroconvert the holdings of the Society’s library to MARC records, add them to OCLC, set up an internal OPAC, add new holdings, and keep the system running and updated.

Librarian – Sharon Watson-Mauro is Director of the Library of the Historical Society of Western Pennsylvania. In addition to overseeing the daily operations of the library, she supervises the library’s preservation program and supervises the photographic coordinator. She serves on the board of the Silver Eye Center for Photography, and is a long-standing member of ORACLE, an organization of international photographic curators.

Curator – Louise Lippincott is Curator of fine arts at the Carnegie Museum of Art. She is responsible for collections of painting, sculpture, works on paper and photographs before 1945. A paintings specialist, she acquires works of art for the collections, organizes exhibitions and the installation of the permanent collection, and carries out research and scholarly writing. Following a 1997 survey exhibition of historic Pittsburgh photography, her department actively collects and exhibits regional photographs. She is the administrator of the Teenie Harris archive.

Museum Technologist – William Real has led the Carnegie Museum of Art’s technology efforts since his appointment to the position in March 2001. He is coordinating the museum’s imminent transition to a new collections management database and is also responsible for the development of digital images of the collections for use with the new system and ultimately on the museum’s website. A former conservator of paintings, his view of technology is grounded in an extensive knowledge of museum practice and sensitivity to collections and their interpretation.

Project Consultant – Paul Conway, Director of Information Technology Services at Duke University Libraries, provides leadership for all of the libraries’ technology programs and services and represents library technology interests on the Duke campus and in regional, national, and international organizations. His particular focus is the development of the Digital Library @ Duke as a comprehensive program of services and tools for the provision and preservation of digital resources for the Duke University community.

## **Budget**

The project budget (detail provided in the Budget Justification) will support both the human and technological effort required to accomplish the digital reformatting of selected image collections and their appropriate item-level description. Fundamental components of the budget include funds to purchase hardware and software for data capture, and funding for the content partners to hire temporary project staff to perform the scanning, metadata entry, and quality control tasks associated with the project. The budget comprises requested support from IMLS (\$242,157) and matching contributions that amounts to 56% of the total grant amount (see Contributions) from the University of Pittsburgh and partners in the form of staff time and an in-kind equipment contribution (\$192,404). Support from the IMLS is requested in several categories, namely Personnel (temporary staff), Consultant Fees, Travel, Materials, Supplies and Equipment, and Services. Indirect cost is calculated at the University of Pittsburgh's Federally negotiated rate of 49.5% on the modified total direct cost; IMLS will support 8% of this rate as cost sharing.<sup>22</sup>

## **Contributions**

A substantial level of matching contribution accompanies this request. As indicated in the Budget Justification, a contribution that amounts to 44% of the total grant amount comes from the University of Pittsburgh and project partners in the form of staff time and in-kind equipment contribution. The university and each partner institution has pledged a portion of several permanent staff members' time to project-related activities for the duration of the two-year project. In addition, the University's Digital Research Library will dedicate a Web server to support the images, search engine, website, middleware, and other applications as deemed necessary.

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<sup>22</sup> According to the Office of Research at the University of Pittsburgh, the 8% rate charged to IMLS is based on the Total Direct Project Costs to IMLS for a "training and instruction grant"; it provides for no exclusions (i.e., modified direct costs).