NDSR Project Title

Developing and Promoting Policies and Services to Make Digital Assets of Research Libraries Accessible

Goal Summary
To strengthen and expand a new initiative on digital accessibility in research libraries by incorporating a universal design approach to library collections and services. A suite of solutions, organizational models, and best practices for the research library community will be compiled so that the research library community may collect, produce, curate, preserve, and make available their digital assets in a fully inclusive and accessible way.

Specific Goals / Objectives
- Identify accessibility standards and policies, as well as licensing, reformatting, and procurement requirements for e-texts and other digital assets.
- Document the state of accessibility teaching and research in library and information schools.
- Attend meetings and conferences to learn and network with the accessibility community.
- Receive hands-on technological training (including self-guided) in an accessibility lab.
- Gather and construct building blocks for creating institutional plans for digital accessibility.
- Develop an online digital accessibility toolkit.

Timeframe & Deliverables

**Months 1-4: Immersion and Education**
- Site visits to Maryland and DC ARL libraries and disability services offices.
- Site visit to International Braille and Technology Center for the Blind (IBTC), National Federation of the Blind Headquarters in Baltimore, MD.
- Begin work on online toolkit.

**Months 5-6: Community Engagement**
- Continue work on toolkit.
- Outreach/interviews with library school faculty and deans engaged in accessibility work and research:
  - University of Illinois at Urbana-Champaign
  - Syracuse University
  - University of Washington
  - Wayne State University
- Propose presentation for CNI Conference.

**Months 6-8: Digital Strategy Toolkit**
- Completion of online toolkit.
- Participation in webinar to ARL community on findings.
- Provide other project briefings as appropriate, e.g., ARL and ALA meetings.

Project Deliverable
The Resident will contribute to a digital accessibility strategy toolkit—an online resource that will include policies, standards, and practices related to digital accessibility for research library assets.

Resources Required
2 Mentors (Prue Adler and Judy Ruttenberg); 1 Resident

ARL will provide workspace and support to the resident in its headquarters in Washington, DC, a collaborative office environment. The topic of accessibility intersects with several of ARL’s strategic directions, which will give the resident occasion to work with staff other than the designated
mentors. In addition, ARL will be endeavoring to make its digital products and presence more accessible in the coming year. The Resident will participate in that process.

**Context**

The growing demand for instructional e-content and burgeoning digital library collections requires greater collaboration amongst all institutional partners, including academic leadership, research libraries, disability services, and information technology services. These partners should share knowledge, define roles, and become knowledgeable about print and other disabilities in order to effectively serve users, to meet the requirements of federal and provincial law, to fulfill their shared mission to serve all constituents equally, and to influence the marketplace to produce accessible digital content and services. Members of the research library community should collaborate within each institution and actively participate in cross-institutional and cross-industry efforts to advance universal design standards for digital information resources, library-mediated or otherwise.

Within ARL’s own office, the Resident will participate in an in-depth and up-close view of ARL’s process of developing an accessible website and back file of electronic documents. This transformation will include training in software and authoring tools.

**Required Knowledge and Skills for Residents**

- Deep interest and/or understanding of accessibility issues
- Strong communications and organizational skills
- Ability to lead small group discussions
- Familiarity with library systems and digital assets

**Preferred Knowledge or Experience**

- Experience working with accessibility policies and/or requirements
# Goal Summary
To identify an institutional solution for long-term digital asset management

# Specific Goals / Objectives
- To compile a detailed inventory of existing digital assets to define scope and inform requirements
- To draft an institutional policy for the appraisal and selection of digital content for long-term preservation
- To identify system requirements for a digital asset management system (DAMS) through information gathering sessions with key staff across the organization
- To evaluate software systems and recommend a DAMS solution based on requirements and reference interviews

# Timeframe & Deliverables
Overall: 9 months

- **Months 1-3: Orientation, Information Gathering, and Inventory**
  - Review Digital Assets Information Gathering report. Assemble project team and identify available resources, expertise, and support. Expand upon data presented in report to assemble inventory in which digital content, types, file formats and storage locations are identified by department. Work with departments to identify valuable assets for long-term preservation and formulate retention criteria and schedule.
  - Deliverables: DO-wide meeting to present digital preservation concepts and the benefits of a DAMS; detailed inventory of digital assets at DO; and draft of institutional selection criteria policy

- **Months 4-5: System Requirements for DAMS**
  - Identify available financial resources and develop a budget. Conduct requirements gathering sessions across departments to identify use cases, current workflows, and critical requirements.
  - Draft a summary report for institutional review. Review software selection methods and develop assessment instrument.
  - Deliverables: System budget proposal; requirements report; and DAMS evaluation template

- **Months 6-9: Software selection process**
  - Perform environmental scan of available systems and assess each candidate according to evaluation template. Engage with vendors and developers to assess required resources and coordinate demonstrations and reference interviews. Assemble findings and propose recommendation at DO-wide meeting.
  - Deliverables: Evaluations of all available open-source and proprietary solutions; prioritized list of candidates with cost and functionality analysis; and final written report and presentation of findings

In addition, based on their academic expertise in digital curation, the Resident will be asked to provide written recommendations regarding long-term guidelines and best practices for the DAMS, including system implementation, file-naming conventions, metadata standards, identification of trial datasets, and import workflows.
Dumbarton Oaks Research Library and Collection (http://www.doaks.org) is an institute of Harvard University, whose mission is to support research and scholarship in Byzantine, Pre-Columbian, and Garden and Landscape Studies. In addition to sponsoring fellowships and international scholarly meetings in these fields of study, Dumbarton Oaks welcomes researchers at all career stages to study the renowned collections held by its museum, library, and archives. Increasingly, Dumbarton Oaks is making its diverse collections of Byzantine and Pre-Columbian art, Byzantine seals, rare books, photographs, scholarly publications, and oral histories, available online.

The organization has identified the need for a digital asset management system (DAMS) to further its ongoing digital initiatives while addressing the imperatives of long-term digital preservation. The Resident will play a key role in establishing a sustainable infrastructure for digital stewardship at a renowned center of humanistic research with peerless collections of art, books, and archives in three fields.

Last year, Dumbarton Oaks staff conducted an institution-wide information-gathering project to identify the nature and scope of its digital assets. Shalimar Fojas White, Manager of the Image Collections and Fieldwork Archives (ICFA), and Pete Haggerty, Network Systems Administrator, conducted surveys and interviews with department heads and key staff to identify types of digital assets and their storage locations, as well as current workflows for digital asset creation, organization, retrieval, and delivery. In October 2012, Fojas White and Haggerty prepared a report of their findings and summarized the issues identified by Dumbarton Oaks staff. Current data storage is distributed and incompletely networked. Digital preservation consists of manual backups with no off-site redundant storage. Many of the report’s recommendations – namely, centralizing the storage of digital assets and establishing institutional policies and procedures to manage them – point to the implementation of a DAMS as an enterprise solution.

With this background work completed, the Resident is well-positioned to play an immediate, concrete, and significant role in the long-term planning for digital preservation at Dumbarton Oaks. In the process, the Resident will acquire practical skills and experiences that will be readily transferrable to their future professional endeavors in digital stewardship. During the nine-month residency, the Resident be embedded within a departmental setting and be guided by mentors in ICFA with software selection experience (Fojas White and Anne-Marie Viola, Metadata and Cataloging Specialist). Also, since the proposed project is, by its nature, inter-departmental, the Resident will be integrated into the larger fabric and organizational culture of Dumbarton Oaks. The Resident will collaborate with colleagues with expertise in a variety of fields and disciplines, including cultural heritage professionals in libraries, archives, and
museums and scholars focusing on Byzantine, Pre-Columbian, and Garden and Landscape Studies.

Through this work, the Resident will be exposed to the professional practices of scholars, curators, librarians, archivists, and publishers, as well as the differing requirements, expectations, and uses for digital content across their disciplines. Throughout the residency, the Resident will also have the opportunity to leverage their academic knowledge by educating colleagues on best practices and recent advancements in the field of digital preservation. As a result, the Resident will play a leading role in a community-wide effort to develop shared solutions to the challenge of managing and preserving digital assets at Dumbarton Oaks.

The Resident will have a graduate degree in Library and Information Science, Computer Science, Information Science, Information Technology, Applied History, Arts Administration or equivalent from an accredited institution of higher education. Additionally, the ideal candidate will have the following:

**General knowledge or experience:**
- Experience within a visual resources, archives, library, or museum setting
- Experience with cross-departmental or institution-level initiatives
- Demonstrated ability to communicate effectively, both orally and in writing
- Strong organizational, analytical, and problem-solving skills and attention to detail

**Specialized or technical knowledge or experience:**
- Digital preservation strategies, storage options, and disaster planning, including the OAIS reference model, LOCKSS, and emulation and migration techniques
- Digitization guidelines and parameters (color space, file formats, resolution)
- Server and database environments

**The following skills or experience are preferred but not required:**
- Experience with digital asset management or DAMS
- Experience with software selection methodology and requirements gathering and documentation
- Experience with implementation and management of enterprise software, proprietary and open-source
- Experience with usability and task-based assessment
- Knowledge of embedded metadata for digital images
- Knowledge of Digital Rights Management (DRM) and copyright issues
NDSR Project: Born-Digital Preservation at the Folger Shakespeare Library

Goal Summary

To establish local routines and best practices for archiving and preserving two types of born-digital material: 1) born-digital content created by Folger Shakespeare Library staff in support of the institution’s mission and 2) born-digital content collected by the Folger including primary source materials related to Shakespeare productions, interpretations, editions, and criticism to the present.

Specific Goals / Objectives

To integrate Folger-created digital masters of a variety of file types, along with XML-based descriptive and administrative metadata records, into bit-level digital preservation through the MetaArchive network.

To both expand the Folger’s reach into the open web (adding additional sites to existing Archive-It collections and creating at least one additional new collection), while strengthening the Folger’s internal web archiving workflows and quality assurance routines.

Timeframe & Deliverables

Overall – 8 months

Months 1 through 4 – Train in existing routines, including Archive-It webinars and overview of existing LOCKSS processes. Discuss with Folger staff creation of a Folger file format inventory; identify master born-digital items and hold preliminary discussions of possible preservation workflows. Review QC and in-house documentation of existing Archive-It collections; discuss with Folger staff expansion of existing collections and creation of at least one new web archival collections. Research software dependencies of file format inventory and staff-identified master born-digital items; identify possible tools and administrative metadata recommendations for future ingest of master born-digital items. Research known QC issues with existing Archive-It collections and formulate recommendations for improved workflows. Scope and run test crawls on at least one newly-created Archive-It collection.

Months 5 through 6 – Publish internal file format inventory and seek feedback on items and types of items requiring backup and business records archiving only (e.g., internal or purely operational records); and requiring more robust digital preservation (e.g., records of scholarly, educational, cultural activities.) Test file ingest and administrative metadata creation for legacy items/formats identified as masters; begin training of staff to ingest their own newly-created master born-digital items into MetaArchive. Review QC on newly-created Archive-It collection(s), and begin building out new collection(s) and / or adding new sites to existing collections.

Months 7 through 8 – Coordinate LOCKSS test crawls with Folger and MetaArchive staff to ensure that archival units are properly defined. Finalize local toolset/workflows for master born-digital ingest and document procedures. Finalize local documentation for web archiving QC, web archival collection creation and expansion.

Deliverables: 1) A documented case study of creating and analyzing a file type inventory at a cultural heritage institution. 2) Tested and documented local workflows for ingest of both legacy, and new staff-identified master born-digital items into the MetaArchive private LOCKSS network. 3)
Tested and documented local workflows for web archive collection creation, collection expansion, and collection quality control.

**Resources Required**

1 Mentor (Jim Kuhn), 1 Resident

Access to select key Folger Shakespeare Library staff in Central Library, Digital Access, and Information Technology, as well as key staff at partner institutions MetaArchive and Archive-It. The Folger will integrate the Resident into the work and organizational culture of the Folger through ongoing involvement in staff meetings related to digital preservation.

**Context**

The Folger Shakespeare Library is one of the world’s leading centers for scholarship, learning, culture, and the arts. In recent years, the Folger has been working on internal digital preservation strategies and workflows aimed at sustainable stewardship of digital surrogates. These strategies and workflows have been designed to ensure the preservation of digital images of rare books, manuscripts, and works of art from the institutional collections. Through these efforts, the Folger is working towards a system whereby the MetaArchive private LOCKSS network preserves our master digital images (i.e., those files that have not had any post-production work done to them) under bit-level preservation on six or more servers geographically distributed across three continents. Simultaneously, we are now entering our second year of subscription to the Archive-It web archiving service, and are currently testing workflows and quality assurance processes on two small collections: one aimed at Folger content, and one aimed at Shakespeare-related websites on the open internet.

We expect these current Archive-It web archiving and MetaArchive digital surrogate preservation workflows to be fully implemented by September 2013, at which point we will be poised to take our next step in born-digital preservation. The work we expect to undertake in 2013 will provide first-hand experience in a skills-oriented internship of real benefit to a National Digital Stewardship Resident and to the Folger Shakespeare Library. Participation in this project will provide our NDS Resident with a clear understanding of a variety of strategies for collecting born-digital material, and for preserving locally-born-digital material.

We believe that this project can serve as an NDSR model for future participants, because the issues being addressed by the Folger increasingly are faced by cultural heritage and memory institutions of all sizes. Many such institutions have been engaged in high-resolution digital imaging of cultural heritage materials for over a decade. These digital assets represent major past—and ongoing—investments in capital, staff time, and infrastructure. At the same time, cultural heritage organizations are increasingly involved in creation and responsibility for the preservation of digital assets with no analog counterparts.

We conceive of this project as having multiple lessons of relevance to peer special collections institutions. First, we expect to demonstrate that bit-level preservation through a private LOCKSS network can serve as an important preservation strategy not just for digital facsimile images, but also for certain kinds of non-web-based born-digital assets; second, to demonstrate that web archiving can serve both as a digital preservation strategy for collecting and providing ongoing access to web-based born-digital cultural heritage materials; and third, that partnership in such efforts with nonprofits in the digital preservation community (in our case MetaArchive and Archive-It) can be a viable approach for small institutions.
Required Knowledge and Skills for Residents
[identify the background, skills, and educational requirements necessary for resident success]

The successful candidate will have an ALA-accredited master’s degree in library or information science or studies, or in information management or computer science. Additionally, the successful candidate will have the following:

General Knowledge:
- Strong oral and written communication skills, including the ability to write and document clearly, and to explain complex technical ideas in a simple and concise way to others with less technical knowledge.
- Ability to work with others, to participate in team projects, and to follow technical instructions.

Specialized Knowledge or Experience:
- Academic library experience in library systems, relational database management systems, or digital repositories.
- Familiarity with key people, events, and cultural concepts in early modern European history and culture.

Technical Experience:
- Understanding of database technologies.
- Experience with at least two of the following: Unix-Linux, Mac OS, or Windows operating systems; relational database management systems; web services and applications; digitization projects involving library and digital library metadata and standards.

Preferred Knowledge or Experience
The following skills are preferred but not required:
- Experience in academic library special collections.
- Knowledge or experience in current and emerging best practices, tools, principles and standards for digital preservation and curation.
- Experience in digital asset management and / or in managing or cataloging multimedia materials and digital products.
- Working experience with an integrated library system or a digital image database.
NDSR Project Title

Taking Action to Mitigate Format Obsolescence

**Goal Summary**

Develop a process for creating and enacting Format Action Plans at the Library of Congress.

**Specific Goals / Objectives**

Survey and interview Library of Congress staff from several departments about the digital formats in use, analyze the risk to formats. Study format action plans in use at other organizations. Work with Library staff to develop a template for an action plan for the most at-risk formats. Develop actual format action plans with Library staff.

**Timeframe & Deliverables**

1. **Phase One (months 1-4): Interview and survey.** The NDSR resident will study existing surveys and design an information collection project to inventory the formats in use at the Library, noting their risk factors. The resident will work closely with OSI and LS staff to identify key organizations and individuals in the Library from where to gather this information. Results from the survey will be analyzed and the resident will deliver a report of the overall picture of digital format use at the Library of Congress, highlighting formats that are at particular risk.

2. **Phase Two (months 5-6): Creation of Action Plan Template.** The NDSR resident will work with OSI and LS staff to iteratively develop an action plan template. Format action plans in place at other institutions can serve as a starting point. The LC format action plan should focus on practical short-term and long-term actions that ensure the file or file contents are kept accessible.

3. **Phase Three (months 7-9): Complete Format Action Plan.** The resident with consultation of Library staff will, using the previously created template, develop Format Action Plans for at least three different formats. The formats for which an action plan is completed will be selected by the resident and Library staff based on the format’s risk factors and Library priorities.

**Resources Required**

No special resources are required beyond a standard office and computer set-up.

1 Resident, 2 mentors and access to designated Library of Congress staff.

**Context**

The Library of Congress is working toward establishing digital preservation guidelines and best practices that reflect the latest research findings and industry trends and practices. This outcome is outlined in the Library of Congress strategic plan and is being executed by the Digital Preservation Working Group, a collaborative effort between staff from the Office of Strategic Initiatives and the Preservation Directorate of Library Services. For the past year, a working group has been compiling and reviewing relevant policies, standards, and workflow descriptions to inform the preparation of guidelines for the preservation of the Library’s digital materials.

A life cycle approach to the management of digital materials ensures their preservation and longterm access. There are actions and decisions to be made at each phase of the life cycle that will mitigate the risk of loss of and/or damage to digital materials. Decisions made at the time of creating a digital file are crucial to its longevity. If non-standard formats are chosen or low-quality
resolutions are specified, the digital resource will have limited use into the future. When converting to digital forms, standard formats should be used. When resources allow, the highest resolutions should be considered. When creating born-digital documents, consideration should be paid to using a standard or widely adopted format. Digitization guidelines that support the preservation of digital materials and information about sustainable digital formats are available but specific preservation strategies are not aligned with specific formats in use at the Library of Congress.

The NDSR resident will work within the digital life cycle context as defined by the DPWG to create at least three format action plans for the digital formats most at-risk at the Library of Congress. A format action plan is a specific preservation strategy for a file format in the collection.

**Required Knowledge and Skills for Residents**

- Awareness of and interest in digital file formats
- Ability to communicate clearly and effectively in writing, meetings and interviews
- Ability to understand the technical aspects of digital file formats and their software dependencies
- Awareness of digital format sustainability factors and issues and digital preservation in-general

**Preferred Knowledge or Experience**

- Knowledge of survey and information gathering methodologies
- Experience in a digital library, archive or related heritage environment
NDSR Project  Developing a Thematic Web Archive Collection

**Goal Summary**
The Resident will create a collection of Web content on a specific theme or topic of interest to the Resident and relevant to NLM collecting strategies, such as medicine and art or the e-patient movement. The project will involve developing a new Web collection from start to finish, and will include testing and refining anticipated workflows and timeframes for the development of a new Web collection. Documentation by the Resident of the processes of creating a new thematic collection will aid in the development of effective workflow and quality control review procedures to optimize the quality of Web collecting at the National Library of Medicine. The work of this project may serve as a case study for the development of a new Web collection and will likely be of great interest to other institutions considering Web collecting initiatives within their own organizations.

**Specific Goals / Objectives**
For this project, the Resident will:
- Identify a topic/theme for Web collecting within the scope of NLM Collection Development strategies (http://www.nlm.nih.gov/tsd/acquisitions/cdm/).
- Develop a collecting proposal, including research and identification of 30-50 seeds to crawl, with detailed recommendations for the crawling frequency and duration necessary to fully capture the desired resources.
- Add seeds to NLM’s Archive-It collection (http://www.archive-it.org/organizations/350) and initiate a test Web crawl to identify and address Web capture problems in advance of an actual crawl.
- Conduct a Web Crawl and review captured content, analyzing and documenting results to determine whether desired content was adequately captured.
- Make adjustments to crawling instructions to improve future capture of content; monitor/review scheduled crawls.
- Review and make recommendations for the enhancement of preliminary Web collecting workflows as described in the April 2012 report of the NLM Web Collecting and Archiving Working Group.

**Timeframe & Deliverables**

**Months 1-4**
- Meet with members of the NLM Collecting and Archiving Working Group for an in-depth introduction to the activities of the working group and NLM Web collecting efforts so far;
- Gain a practical understanding of using Archive-It through training from NLM staff with Archive-It experience, Archive-It’s online training modules, and an in depth review of Archive-It’s detailed documentation;
- Collaborate with NLM staff in the History of Medicine Division and Technical Services Division to identify a topic/theme for Web collecting within the scope of NLM Collection Development strategies; and
- Develop and present to the Web Collecting and Archiving Working Group a Web collecting proposal, including research and identification of 30-50 seeds to crawl. The proposal will be reviewed by the working group and other relevant NLM staff for content and for technical and data budget considerations. Once approved, and if needed, the Resident will seek copyright permissions with guidance from NLM.

**Months 5-6**
- Add seeds to NLM’s Archive-It collection and initiate a test Web crawl to identify and address Web capture problems in advance of an actual crawl;
- Conduct a Web Crawl and review captured content, analyzing and documenting results...
based on a review of Archive-It Crawl reports and a manual review of content to
determine whether desired content was adequately captured; and

- Make further adjustments to crawling instructions, if needed, to improve future capture of
  content; monitor/review scheduled crawls as needed according to collecting proposal.

**Months 7-8**

- Prepare a detailed report of the selection strategy, the procedures followed, specific
  challenges encountered, and adjustments made throughout the collection development
  process;
- Make recommendations to the Web Collecting and Archiving Working Group for further
  development of preliminary workflows and procedures for Web collecting; and
- With NLM mentor, develop a strategy and preparations for communicating
  results/findings of the NDSR project to NLM leadership and staff, as well as to the wider
  digital preservation community through press releases, blog postings or other publications,
  and presentations at meetings or conferences.

**Project Deliverables**

- Web collecting proposal, including research and identification of 30-50 seeds to crawl
- A report documenting the collection development process and detailed analysis of the
  results
- Recommendations for further development of preliminary workflows and procedures for
  Web collecting at NLM
- A new NLM Web collection of 30-50 Web resources

**Resources Required**

1 Mentor (Moffatt), 1 Resident

Access to select staff within the National Library of Medicine, including the leadership of NLM’s
History of Medicine Division and Technical Services Division, and the Web Collecting and Archiving
Working Group.

As needed, contacts with other related organizations who have demonstrated interest and
expertise in web collecting and archiving.

**Context**

In 2011-2012 the NLM Web Collecting and Archiving Working Group engaged in a pilot project to
better understand the processes and challenges of collecting born-digital Web content to expand
the Library’s collecting strategy for digital formats. An NLM news announcement about this
initiative is available at http://www.nlm.nih.gov/news/nlm_web_content_collection.html. One of
the recommendations of the Working Group was that NLM should develop curated collections
around a particular theme or topic that could be planned well in advance and added to over time.

**Required Knowledge and Skills for Residents**

Graduate degree in Library and Information Science, or equivalent.

Additionally, the successful candidate will have the following:

- General knowledge of Web archiving and collecting practices, digital preservation principles
- Experience using Microsoft Windows computers and office productivity software such as
  Microsoft Office

**Preferred Knowledge or Experience**

Familiarity with Web archiving programs/services, such as Archive-It
## NDSR Project

### The Digital Dissemination Challenge

**Goal Summary**

Carry out a diagnostic of and propose improvements to the National Security Archive's digital assets ingestion, management and dissemination processes.

**Specific Goals / Objectives**

The Resident would help us take a snapshot of all Archive activities that involve the capture, preservation and publication of digital assets: from the public reading room to analysts’ offices; from the indexer/cataloger offices to the IT department, where heavy duty scanners and terabyte servers are operated; from the directors’ offices to the Web masters’ files, and those of our partners in other institutions which help us to post mega-collections on the Internet.

The resident will help us evaluate our processes in the fields mentioned above against the best practices suggested by established institutions and will present suggestions for improvements, reinforcement, and establishment of new procedures.

**Timeframe & Deliverables**

[Months 1-3] Conduct a review and analysis of current digital management operations and task flows, and identify solutions or improvements in these operations. This will involve the Resident working exclusively with the Information Systems Team (IST) [Director, Network administrator, Databases administrator and Web master] to get acquainted with the flow of digital content, operations and daily tasks as they stand, from scanning to storage and management of collections, applications and databases used in this process, to regular IT operations such as server management, data protection and security, as well as Web publication and content management systems.

[Months 4-6] Survey Archive staff on how they acquire, store, manage, and add value [metadata and organization] to documentary holdings; also, how they carry out electronic publication activities or on-site terminal serving of digital assets, as well as receive support from IST. To answer these questions, the Resident will approach the following staff members: the Reading Room and Front Desk staff; Indexers of the Production Team and the Torture Archive Project; Web Master and Blog coordinator; Project Analysts, Assistants and Interns involved in scanning, scraping or acquiring digital collections; senior staffers including the Director, Director of Research, Production head and key Board members and advisors involved in conceiving and implementing the goals and objectives of the Archive in general. Some of the issues to be explored at this stage will include:
a) Technical: The way we acquire collections and information, and the way we disseminate our holdings; how to enhance the acquisition and dissemination processes by exploiting state-of-the-art methods or frameworks used in libraries or other similar leading organizations; how to use a Web-based approach and whether other platforms can be used to simplify and accelerate these processes.

b) Organizational: How different staffers and teams interact; what regulations and procedures exist, or are needed for a smoother and more coherent, efficient and high impact operation.

[Months 7-8] The Resident with the help of Archive Directors will wrap up his or her work and produce a report with suggestions, key reinforcements, identification and modification of tasks, operations, work flows, guidelines and processes.

Resources Required

1 Mentor (Osorio), 1 Resident

Access to all staff: front desk-reading room-vault, scanning and IT team, indexers and cataloguers, web master, analysts and directors.

Contacts with organizations who have expertise in digital management, for example: Washington Research Libraries Consortium (WRLC), Benson Latin American Collection - University of Texas Libraries, U.S. Department of State Bureau of Information Resource Management, National Archives and Records Administration, Library of Congress.

Context

An Explosion in Holdings

By the turn of the millennium, the National Security Archive had established a reputation as the leading academic user of the Freedom of Information Act (FOIA), and a major independent repository of declassified U.S. government records on contemporary (post-World War II) history. At the time, we estimated that our collections – available to the public in our Reading Room – totaled 5 million pages. Of these, 40,000 documents (more than 200,000 pages) had also been published as richly curated microfiche collections available at educational institutions around the globe. We had also begun publishing concise compilations of selected documents in the form of “Electronic Briefing Books” (EBBs) on the new medium, the World Wide Web.

In the decade-plus since then, our paper holdings have expanded steadily. Today, researchers have access to more than 7 million pages of records acquired through FOIA, research trips to presidential libraries and other archives around the world, as well as through donations from authors, historians and journalists.

During the same period, our electronic records holdings have skyrocketed compared to what they used to be. We have targeted three specific portals for collection and broad dissemination in this format: our multiple issue web site containing more than 400 Briefing Books with analysis and supporting selections of U.S. records on varied national security and
foreign policy issues; the “Torture Archive” containing thousands of records pertaining to the Guantanamo Bay detention center and abuses in the Abu Ghraib prison; and the Nuclear Vault, which holds hundreds of key records needed to understand U.S. nuclear policy from the Cold War to the present. In all, these portals contain more than 10,000 annotated documents, along with analyses, which users can browse freely. In addition, researchers currently have access to a subscription product, the Digital National Security Archive (DNSA), which features more than 95,000 selected, cataloged and indexed documents (700,000 pages) that constitute important segments of the underlying record of U.S. foreign and military policy since the middle of the 20th Century. *The Washington Journalism Review* described these holdings collectively as “a state-of-the-art index to history.”

Since 2004, when we made our first major leap into the digital arena, we have multiplied the quantity of our digital holdings through:

- Scanning and ingestion of U.S. government responses to FOIA requests (100,000 documents);
- Capturing U.S. agency portals for permanent preservation purposes (700,000 documents)
- Ingesting large digital collections co-managed with international institutions (600,000 documents)
- Carrying out numerous scanning projects at archives around the country and the world (200,000 documents)

The Archive’s digital collections include records as varied and rich as the Paraguay Secret Police archives; Guatemalan Presidential Staff records; Truth Commission donations to Panama, Indonesia, Peru, Liberia and Rwanda; selections from former Soviet archives; and curated selections of the Kissinger papers (Memcons and Telcons); the Nuclear Vault; the Torture Archive (Guantanamo-Abu Ghraib); the Nixon Tapes; and Department of State records on Argentina, Chile, Guatemala and El Salvador.

In order to accomplish our second digital leap, the Archive faces a three-tiered challenge:

1. Bottlenecks in ingestion capacity: outlining ingestion processes; standardizing scanning parameters for different acquisition processes, etc.;
2. Management overload: selecting internal content management systems; standardizing digital formats and indexing; establishing robust container and backup processes; guidelines and procedures for precise accounting.
3. Bottlenecks in dissemination capacity: outlining dissemination means; acquiring and adapting content management publication tools.

*Required Knowledge and Skills for Residents*

The resident will have a graduate degree in Library and/or Information Sciences, Information Technologies or equivalent from an accredited institution of higher education.

Additionally, the successful candidate will have the following:

General Knowledge

- ☐ digital conservation principles

Specialized Knowledge or Experience

- ☐ Application of digital preservation and/or digital asset management practices
Preferred Knowledge or Experience

- Descriptive metadata schema such as MARC, MODS or Dublin Core or their equivalent
- Technical Experience
- Use of both Microsoft Windows and Apple Macintosh computers
- Use of office productivity software such as Microsoft Office and Adobe Acrobat
- Use of graphical design or imaging systems
  - Familiarity with content management systems: Documentum, Laserfiche, Alchemy, Drupal, Greenstone, Dspace
  - Familiarity with scanning and digital acquisitions techniques
Broadcast Media Archive: Appraisal and Evaluation of At-Risk Media to Support Digitization Initiative

**Goal Summary**
Develop and apply evaluation tools, define selection criteria, and outline recommended workflows needed to execute a successful analog digitization initiative for a moving image collection resulting in a project plan that will serve as a replicable model and best practices guide for other institutions.

**Specific Goals / Objectives**
- To document assessment and selection criteria for at-risk analog inventory
- To recommend digital formats for access to and preservation of obsolete physical media
- To describe sustainability challenges for digital legacy preservation with long term storage

**Timeframe & Deliverables**
- Overall – 8 months
- Months 1 through 4 – introduction to organizational structure, workflows and systems, as well as historical context for archive collection; reference case studies or similar literature on moving image collection appraisal and preservation, in particular documentation produced for the *Preserving Digital Public Television* initiative (NDIIPP); through access to electronic collection data and interviews with internal staff, begin assessment.
- Months 5 through 6 – continue assessment; define selection criteria and scope of stewardship role based on legal considerations and unfunded status, identifying any challenges or barriers that arise in accessing relevant information; present draft of project plan to PBS Project Management team.
- Months 7 through 8 – assemble detailed project plan, including outlining workflows for movement of physical media to vendor, receipt of digitized media, and internal sustainability challenges for file maintenance. Work with appropriate internal staff on application of recommendations outlined in plan. Deliverable: Detailed Project Plan

**Resources Required**
- 1 Mentor (V. Allen), 1 Resident
- Access to staff from within PBS to include, but not limited to, Technology & Operations: Media Operations Center, IT, Project Management; Legal Affairs, and Programming.
- As needed, contact with organizations within the public broadcasting membership, such as WGBH and WNET, as well as contact with organizations who have expertise or interest in the preservation of moving image media, or those who have conducted a similar project. Examples: Association of Moving Image Archivists (AMIA); American Archive Project (CPB); New York Public Library

**Context**
The PBS archive contains a broad selection of historically significant programming nationally distributed over more than 40 years. There also is a sampling of non-broadcast materials including seasonal previews, closed-circuit teleconference programs documenting public broadcasting business communications and annual meetings, and training videos. The archive does not include raw footage or production elements.

Most of the collection holdings are broadcast masters set aside for donation to the Library of Congress in accordance with the 1993 PBS-Library of Congress agreement to preserve public television programming. An initial deposit under this agreement was made around 1997, though in subsequent years the Library has been unable to accept additional physical media due to space constraints and format and equipment obsolescence issues. In recent years, the Library of Congress
Media Library and Archive

has communicated a preference for digital files to satisfy the requirements of the donation agreement, and PBS is currently seeking funding to ingest and index programs held on tape formats that are obsolete and rapidly deteriorating. Assets selected for digitization will be archived at PBS and shared with the Library of Congress for historical preservation and research purposes.

Representing the most at-risk media in the PBS collection are upwards of 30,000 titles on 2 inch and 1 inch analog tapes for which there exists a critical obsolescence of playback equipment and skilled operators to ensure the successful migration to digital media formats. In addition, many of these titles are over 20 years old and suffer from significant age related deterioration.

To prepare the at-risk collection for digitization, the resident will undertake an assessment and evaluation of this legacy media stored at PBS’ warehouse facility and recommend selection guidelines for long-term preservation in accordance with our role as distributors, rather than copyright holders. Evaluation of targeted holdings should uncover redundancies in the collection, such as duplicates of titles held by PBS (titles held on multiple formats), and identify significant collections of PBS titles held by other public or private archives and institutions. Particular attention should be given to ‘orphaned’ items for which the copyright holder cannot be located, as many of these are one-off titles that are not duplicated elsewhere.

The expectation for the digitization initiative is to ship a selection of at-risk titles to an independent vendor capable of creating acceptable industry standard digital files from the obsolete tape formats. Titles that don’t fall under PBS collection guidelines, or are not covered by the Library of Congress donation agreement, will be evaluated for donation to appropriate stewardship organizations or returned to producers.

### Required Knowledge and Skills for Residents

The successful resident will have a graduate degree in Library and Information Science, History and Archival studies, Moving Image Archiving and Preservation, or the equivalent from an accredited institution of higher education. In addition, the successful candidate will have the following:

**General Knowledge**
- Archival and preservation principles and practices

**Specialized Knowledge or Experience**
- Ability to retrieve and analyze database data, draw conclusions, and make recommendations
- Knowledge of/interest in preservation of moving image collections
- Familiarity with descriptive metadata schema such as PBCore or Dublin Core

**Technical Experience**
- Use of standard business software such as Microsoft Office (Word, Excel, PowerPoint), Microsoft Access and Adobe Acrobat
- Use of both Microsoft Windows and Apple Macintosh platforms

### Preferred Knowledge or Experience

The following skills are preferred but not required:
- Knowledge of/interest in intellectual copyright and broadcast distribution issues
- Knowledge of media file formats for preservation and access and technology infrastructure
- Knowledge of Media Asset Management (MAM) systems
NDSR Project | Time-based Media Art: Specialized Requirements for Trustworthy Digital Repositories

**Goal Summary**

To identify the specialized digital curation requirements of time-based media art (TBMA) and establish a benchmark of best practices in order to produce a recommendation of modified specifications for trustworthy digital repositories that will meet the needs of time-based media art and conform to the established national and international standards for trustworthy digital repositories (TDR).

**Specific Goals / Objectives**

To document the specialized requirements that time-based media art imposes on a trustworthy digital repository.

To produce best practices and implementation guidance appropriate for galleries, museums and archives.

To participate in the application of that guidance at the Smithsonian Institution’s archives and art museums.

**Timeframe & Deliverables**

Overall - 8 months

Months 1 through 4 – research and document the digital curation requirements of time-based media art through conversations with art curators, artists, digital curators and authors of the international standard for audit and certification of trustworthy digital repositories and associated readings. Deliverable: Report of findings

Months 5 through 6 – description of recommended components of a TDR capable of handling digital elements of TBMA’s and the recommended workflows for curators, conservators and archivists responsible for their stewardship. Deliverable: Report of Recommendations for TDR Configuration and Curatorial Workflows

Months 7 through 8 – planning as part of a collaborative team within the Smithsonian to apply the recommendation in the context of the Smithsonian’s federated organizational and IT structure, including its centralized digital asset management system and other available systems. Deliverable: Detailed Project Plan

**Resources Required**

1 Mentor (Ferrante), 1 Resident

Access to select staff from within the Smithsonian’s National Portrait Gallery, Freer Sackler Gallery, and Office of the Chief Information Officer.

As needed, contacts with other related organizations who have a demonstrated interest and expertise in digital curation and/or the care of time-based media art. Examples for digital curation include: Maryland Institute for the Humanities, the Museum of Modern Art, New York; Indianapolis Museum of Art; San Francisco Museum of Art; Guggenheim Museuem of Art, and the Tate.

**Context**

Time-based media art (TBMA) that includes digital content requires a unique approach to trustworthy retention and curation that differs from more typical digital records and objects. Digital TBMA content functions in a very specific and prescribed manner unique to each piece of art. Such content, for example, may be popular digital formats rendered with specific equipment, or original programming, or objects rendered in a non-conventional manner. When artists creating TBMA use digital content, it is often in fashions that go “against the grain” of what might be expected or foreseen by software developers let alone archivists and curators. These “aberrant” behaviors, which might signal a breakdown in one context may in fact be generally essential to preserve if we are to respect the intention of an artist.

In light of this context, what has come to be normal expectations and standards for digital record
preservation in a more typical archival setting is insufficient to ensure appropriate and trustworthy digital retention. Further clarification and refinement of existing criteria for trustworthy digital repositories is essential if sustained access is to be achieved. Therefore special attention and effort must be given to identify the body of unique requirements to be addressed when establishing a trustworthy repository for time-based media art, integrate them with the existing definitions and standards, and explore their application in a consortium setting.

The Smithsonian Institution Archives serves as the institutional memory and record manager of the largest museum, gallery and research complex in the world. It works closely with all aspects of the Institution’s cultural heritage, research and administrative units. It has demonstrated leadership in the archival, conservation and digital curation arenas within the Institution and at the national and international level. Several Archives staff members serve as mentors and educators to graduate students, interns, fellows and professional colleagues.

The Archives’ electronic records program is responsible for the preservation and curation for a great variety of digital records and objects in over 300 collections. In the course of this stewardship, it collaborates with other organizations on the research and development of tools and techniques need to address digital curation’s more difficult challenges. Its staff are regularly engaged in standards and best practice initiatives at national and international levels.

To assure the best outcome of this residency, the Archives mentor will facilitate and nurture the resident’s access to gallery curators and conservators, archival staff, and key IT personnel at the Smithsonian as well as to similar figures at other organizations so that the three deliverables will truly benefit the larger professional communities as well as the galleries archives and IT groups at the Smithsonian.

### Required Knowledge and Skills for Residents

The successful resident will have a graduate degree in Library and Information Science, Applied History, Arts Administration or equivalent from an accredited institution of higher education. Additionally, the successful candidate will have the following:

**General Knowledge**

- Archival, curatorial or artifact conservation principles

**Specialized Knowledge or Experience**

- Application of digital preservation and curation and/or digital asset management practices
- XML, including experience creating XML files
- Descriptive metadata schema such as MARC, MODS or Dublin Core or their equivalent

**Technical Experience**

- Use of both Microsoft Windows and Apple Macintosh computers
- Use of office productivity software such as Microsoft Office and Adobe Acrobat
- Use of graphical design or imaging systems

### Preferred Knowledge or Experience

The following skills are preferred but not required:

- Use of audio and video software programs, including knowledge of related file formats and their characteristics
- Use of library or museum collection information systems
- Familiarity with trusted digital repository characteristics and certification criteria
NDSR Project  Accessing Born-Digital Literary Materials

**Goal Summary**
To prototype access points to born-digital materials (including their physical carriers) to better enable researchers to discover and work with the Libraries’ born-digital collections.

**Specific Goals / Objectives**
To create and share a State of the Art Research Report for access models and collection interfaces for born-digital literary materials.

To gather requirements from researchers and library staff for a born-digital collections interface.

To submit recommendations for access policies, reference, and on-site researcher support for born-digital collections.

**Timeframe & Deliverables**
Overall – 9 months

- Months 1 through 4 – survey reference services and collection interfaces provided by libraries with born-digital collections; interview cultural heritage professionals working in research libraries with born-digital collections; work with the Human Computer Interaction Lab (HCIL) to learn the basics of user-centered design and rapid prototyping. Deliverable: Report on State of the Art in Born-Digital Access and Interfaces

- Months 5 through 7 – conduct workshops with Special Collections and Archives staff as well as electronic literature researchers and digital humanists; shadow Special Collections staff in the reading room to collect field observations. Deliverable: Recommendations for access policies, reference services, and on-site researcher support for born-digital collections.

- Months 8 through 9 – design lo-fi paper mock-ups of potential interfaces; design wireframes and interaction behaviors (page flows, transition, navigation); produce working prototype (time permitting). Deliverable: Finalized design brief and final report collating all previous research.

**Resources Required**
Library Mentor (Joanne Archer), MITH Mentor (Matthew Kirschenbaum), Resident

Access to staff from within the Library (including the Information Technology Division), HCIL, and the Maryland Institute for Technology in the Humanities.

Contacts with cultural heritage professionals and researchers working with born-digital collections. Examples include: The University of North Carolina at Chapel Hill, The University of Illinois at Urbana-Champaign, University of Virginia, Emory University, Duke University, and The University of Texas at Austin.

**Context**
The survival of important collections—particularly born-digital collections—depends on their discoverability, accessibility, and usability by diverse constituencies. At a moment when libraries and archives must decide how to allocate scarce resources in order to best fulfill their mission as stewards of the cultural past, including the recent past, we must recognize that unused collections, whatever their other qualities, have few stakeholders and supporters. The interfaces and the service models that welcome interested researchers are important points of human connection.
between collections and communities.

The Born-Digital Working Group (BDWG), collaboration between the Maryland Institute for Technology in the Humanities (MITH) and the University of Maryland Libraries, provides a unique host environment for a National Digital Stewardship Residency. The BDWG, which meets regularly to exchange knowledge, coordinate efforts, create policy, and discuss institutional strategy for born-digital collections, combines the strengths of an established digital humanities center and the resources and institutional infrastructure of a large, public research library.

MITH is a leading digital humanities center that pursues disciplinary innovation and institutional transformation through applied research, public programming, and educational opportunities. Over the past five years, MITH has led or collaborated on a range of projects related to born-digital cultural heritage, digital forensics, digital curation, and the preservation of computer games, interactive literature, and virtual worlds. Locally, MITH collaborates with the Digital Stewardship and Special Collections units of the University Libraries as part of the BDWG. Digital Stewardship coordinates development of standards and best practices for managing digital assets and associated technologies across the University Libraries. Digital Stewardship staff work closely with colleagues across the University Libraries to recommend, develop, and implement tools that will enable the management of a variety of tasks related to stewardship and research including a digital preservation program. Digital Stewardship and Special Collections actively collaborate on the creation of digital collections related to the Libraries’ holdings. Special Collections documents the history of the University of Maryland and the State of Maryland, with particular collection strengths in the areas of literature, mass media and culture, labor history, women’s history, and historic preservation. The ongoing collaboration of these three groups from across the College of Arts and Humanities and University Libraries demonstrates a commitment to acquire, process, and provide access to the increasing quantity of born-digital materials for research.

The NDSR Fellow will collaborate with the BDWG to research, design, and prototype access points, both digital and physical, to better enable interested researchers to discover, and work with born-digital collections. As a focus for this work, the Fellow will explore archival collections comprising materials from two leading figures in the early electronic literature movement, Deena Larsen and Bill Bly. These collections include floppy disks, CD-ROMs, and hard-drives containing word processing documents, images, hypertext interactive fiction, as well as analog manuscript materials and documentation of vintage computing systems. Participating in this residency will expose the Fellow to a diverse community including librarians, archivists, electronic literature researchers, digital humanists, and information scientists. The Fellow will gain experience in policy development, working with legacy media, rapid prototyping, and requirements development and will be well positioned to provide leadership on issues that every library and archive will confront in the coming years.

This Residency will provide the opportunity to work in MITH’s state-of-the-art 4200-square-foot space in Hornbake Library with access to a dedicated digital curation workstation that includes specialized hardware (write-blockers, controller cards) and software for disk imaging, forensic analysis, and emulation. MITH boasts a large in-house collection of vintage computers, ranging from working instances of early home consumer models such as the Kaypro, Osborne, and Apple II, through various generations of Macintoshes and PCs, affording hands-on access to the experience of working with these obsolescent platforms. Hosting the NDSR Fellow as part of the BDWG at
MITH will provide convenient access to all of the project mentors and collaborators including University Libraries’ Special Collections, the College of Information Studies, and the Human-Computer Interaction Lab. MITH functions as a hub for digital research with a weekly Digital Dialogues speaker series, symposia, and special events. As a host site for an NDSR Fellow, the collaborative environment among digital humanists, librarians, and archivists at the University of Maryland is unique and well positioned to provide an active, multi-faceted, trans-disciplinary learning opportunity related to digital curation.

The successful resident will have a graduate degree in Library and Information Science, Archival Studies, or equivalent from an accredited institution of higher education. Additionally, the successful candidate will have the following:

General Knowledge
- Managing primary source materials.
- Demonstrated ability to plan, implement and successfully complete projects.

Specialized Knowledge or Experience
- Digital preservation principles and practices.
- Use of digital repository software such as ContentDM, Fedora, etc.
- Experience with metadata standards for digital collections such as METS/MODS, EAD, and Dublin Core.

Preferred Knowledge or Experience
The following skills are preferred but not required:
- Experience working with born-digital materials/electronic records.
- Use of XML and HTML/PHP.
- Familiarity with both in-person reference services and online finding aids.
- Familiarity with user-centered design principles.
- Iterative prototype design.
- Experience conducting use assessments.
World Bank Group Archives

NDSR Project  eArchives: Memory of the World Bank

Goal Summary
Facilitate and coordinate the World Bank Group’s eArchives digitization project, under the direction of World Bank Staff, resulting in the creation of an institutional asset – a digitized and catalogued historical collection of key archival materials representing over 60 years of global development work and experience.

Specific Goals / Objectives
Identify challenges of the project to management in an environment of reduced funding and increased demand.

Develop and implement a methodology for the digital preservation of master files.

Collaborate with Access to Information (A2I) review team to ensure steady availability of disclosed materials for digitization.

Identify, evaluate and recommend options for publishing content online (including migration from pilot project site).

Depending on funding, either: A) obtain equipment, hire staff and establish staging area for digitization; or B) prepare Statement of Work (SOW) for contracting digitization to third-party vendor.

Oversee file assembly, metadata population, QA and online publishing of digitized materials

Make recommendations for a marketing campaign

Timeframe & Deliverables
Overall 8 months

Months 1 through 4:
- Evaluate progress of pilot, existing guidelines and challenges
- Identify areas for improvement, through process change and/or implementation of additional software tools
- Create recommendations for Web Publishing replacement for approach used for pilot, including plan for migration of existing content already published
- Prepare SOW for contracting digitization to third-party (depending on funding)
- Oversee in-house digitization staff, equipment, QA and online publication of digitized materials as necessary

Months 5 through 6:
- Propose process modifications to improve speed of A2I review, QA, and online publication of materials
- Facilitate implementation of Web Publishing replacement
- Design and propose marketing campaign
- Coordinate with third-party to digitize materials (depending on funding)
- Oversee in-house digitization staff, equipment, QA and online publication of digitized materials as necessary

Months 7 through 8:
- Evaluate long term digital preservation plan for master TIFFs and PDFs. Prepare report on plan and requirements to ensure long term preservation.
- Make recommendations for a marketing campaign
World Bank Group Archives

- Coordinate with third-party to digitize materials (depending on funding)
- Oversee in-house digitization staff, equipment, QA and online publication of digitized materials as necessary

**Resources Required**

Electronic Archivist, Technical Project Lead and Mentor (J. Kramer-Smyth);
Senior Service Lead, Advisor to project (Arleen Cannata Seed);
Access to select staff from within the World Bank Group Archives.

**Context**

The World Bank Access to Information Policy (A2I) creates an environment for the opening of Bank records to the public. At present the Bank manages a vast Archive which is primarily paper-based and which is only accessible to the few, selected researchers who physically visit the Archives in Washington. In order to make the holdings more accessible to the public, the Bank must transform the way it manages the Archives and make its vast resources available in a way which serves the whole world and not just a few. At present, this is not possible because the materials are mostly locked away in boxes preserved in an underground repository. In order to make these materials accessible, they need to be presented in a different format (i.e., PDF) and made available on the web and possibly by mobile devices. While we are not proposing the digitization of the entire Archival holdings in the underground repository, the World Bank Group Archives wishes to select key holdings which are of high value and frequently requested to digitize them for ease of retrieval.

Key holdings to be digitized will be selected using the following criteria:

a) items which are repeatedly requested by the public;
b) items which are older than 20 years and can be released after review against the A2I policy;
c) items which reflect the Bank’s lending and advisory service themes;
d) items of special interest to senior management and project leaders in the current operations of the Bank.

Digitization of these materials will require the following activities by Archives:

a) the review (against the A2I Policy) and the subsequent restriction of Official Use Only, Confidential and Strictly Confidential materials;
b) the scanning of all public documents;
c) the assignment of metadata and other descriptions;
d) organization and arrangement within a repository;
e) a user-friendly interface;
f) marketing and awareness campaign.

This project is scalable – thus, as additional funds are solicited and received, additional scanning of paper documents will be undertaken.

The NDSR resident would co-lead this project. The other co-lead is an experienced Electronic Archivist (EA). Together they would report to the Senior Team Lead in the World Bank Group Archives. The NSDR resident is twinned with the EA for the following reasons: the EA has already done considerable research into the methodology of creating a digital archive and has forged important relationships with the technical teams in the Bank and with external players; the project
World Bank Group Archives

is multi-year and will not be completed within 9 months; the project is complex and requires an in-depth knowledge of the holdings, the needs of World Bank clients, and the technologies for both preservation and presentation; the World Bank is an extensive and multi-faceted organization and as such is difficult for a newcomer to negotiate.

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<td>Knowledge of standard practices in digitization of paper archival materials;</td>
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<td>Ability to evaluate and recommend technical solutions;</td>
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<td>Comfort learning new software packages;</td>
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<td>Understanding of issues related to web-publication of archival materials;</td>
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<td>Detail oriented;</td>
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<td>Strong organizational skills;</td>
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<td>Strong web design skills;</td>
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<td>Marketing experience with websites or archival materials;</td>
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<td>Familiarity with ICA-AtoM software platform;</td>
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