

ABSTRACT

Museums documentation, like museum collections, has been acquired and added to over many decades, but unlike libraries, museums have built their information assets without agreement on standards or traditions of constructing shared resources. Today, museums are producing digital text, sound, image and multimedia documentation without tested professional practices and standards to guide them and, unfortunately, without training in the skills that are needed. A plethora of 'best practice' guidelines have been developed recently for various aspects of digitization, such as cataloging, image capture, and the use of the Dublin Core. Unfortunately these do not help museum professionals because they are written with other types of users in mind; they are not targeted to museum experience, and do not reflect museum roles and responsibilities. As a result, many of the digital resources being created today will not fulfill their long-term potential for use and re-use.

The Art Museum Image Consortium (AMICO) has built up substantial experience in digital documentation methods over the past several years and has within its membership an extraordinary range of registration, imaging, publishing, interactive multimedia and curatorial expertise. AMICO has been developing training programs for and with our member museums; we propose to codify this distributed knowledge and make it available in tested, modular forms for the benefit of the museum community as a whole.

During this two-year project, The Art Museum Image Consortium (AMICO) will develop and test a program for training staff at museums to implement standards-based, institution-wide practices for digital documentation of their collections as an investment in education, dissemination and access. This modular training program, structured to be delivered either as workshop presentations or self-study workbooks, will incorporate findings from measured impacts on museum digital documentation success into teaching materials targeted to museum professionals. The program will be developed by AMICO's professional staff (with the assistance of grant-funded staff) and informed by an Advisory Committee.

We will produce training modules on the following topics: Analysis of Collection-Related Documentation and Interpretation Sources; Defining In-House Documentation Practices; Data, Image and Multimedia Acquisition and Capture; and Long-Term Usability of Digital Documentation. These modules will cover the basics of digital documentation and emphasize the utility of beginning with work-flow analysis and assessment of existing information on collections to transform organizational and professional practice.

Our training modules will be tested in twelve museums, six in workshops and six as self-study, to provide feedback on the content, method of delivery and efficacy of results. During the two year grant cycle, baseline measures of cost and quality from cycles of digitization conducted without benefit of the training will be compared with results achieved after face-to-face workshop training and individually directed use of training materials and procedures. This assessment will contribute to revised, final training modules.

The training modules will be published in print (at cost) and on-line (for free). AMICO is committed to integrating these training materials into our member services programs. We will maintain and update them on the Web and in print, and will present workshops based on them at professional conferences. By providing easy access to the professional skills required to produce quality digital documentation, we can assist in the creation of quality digital resources to ensure that investments in digital documentation in museums produce the greatest possible return.

NARRATIVE

National Impact

The past decade has shown that digitization has an immense potential for opening up museums and their collections to a wider public than ever before. Museum Web sites, CD-ROMS, on-line projects and databases, and especially distribution on the World Wide Web are now available in private homes, libraries, and schools across the nation. Today, it is no longer a question of whether museums will have an illustrated Web site or digitize their collection records. That revolution has been won. But in a larger sense, the battle has only begun.

When library digitization projects began, librarians had already done the most difficult work of creating data systems to manage control of collections. Their practices and training programs were professionalized and traditions of union cataloging predated the formation of digital cataloging consortia like OCLC and RLG. No such foundation was available to museums when they began to digitize the documentation of their collections. Without a national standards body, without union databases and with few institutionalized professional museum-training programs, museum registration and cataloging methods varied widely from institution to institution.

The visual, physical, historical, and multi-cultural nature of museum objects makes them far more complex and difficult to describe and categorize in digital form. Museums, therefore, need to be very strategic in capturing the information they do create, over time, in a way that will make it re-usable in digital form, since they almost never have the luxury of re-cataloging their entire collections.

Early museum digitization projects were generally collection “control” projects that chose to record only a small amount of data, and in formats and on systems that were available for then current use. Too often, even these were incomplete; when “start-up” grants ran out for such projects, systems declined for lack of funds. Compared to library digitization, museum digital documentation is still patchy, incomplete, and institutionally precarious. Although most large, established museums have digitized documentation of their collections to some extent, much work remains. Many museum objects have never been photographed at all, much less made available digitally. Many older museums have a large percentage of records that have not been updated or even re-examined since they were created in the late 19th and early 20th centuries. In most museums, documentary sources of various kinds (texts, books, curatorial and registrarial records, exhibition labels, photographs, video, sound) are created and acquired in all departments throughout the museum, often without documentation or links to particular objects in the museum’s collection. Much of this information is created within the context of a particular exhibition or publication, and is not managed for long-term retention or re-use.

Each museum’s methods have concrete costs, levels of effort, and quantitative documentation results. Each process creates assets with greater (or lesser) long-term value. Museums as institutions and their staffs as individual professionals still have much to learn to adopt workable, cost-effective, long-term solutions to the problems of storing, preserving, and providing access to essential information about our cultural heritage.

Museums, whatever their resources and previous experience, need help to develop digital documentation with a tested and consistent methodology. They also need the training and

professional structure to assess and reconsider the range of current documentation and in-house communication practices, and to compare local practice to that of other institutions. *Currently, no tested training programs are available to museums to help improve institutional digital documentation practices. This grant aims to create and test such training.*

AMICO as a Laboratory

The Art Museum Image Consortium (AMICO) is in a unique position to create a program for *Training Professionals for Digital Documentation in Museums* Formed in September 1997, AMICO is a unique collaboration among museums that shares, shapes and standardizes museum digital documentation. Together, AMICO's members construct The AMICO Library, a coherent and unified digital resource offered to a range of educational users. AMICO's membership includes most of the major art museums in North America, including The Metropolitan Museum of Art, the National Gallery of Canada, the Museum of Fine Arts, Boston, the Art Institute of Chicago, and the J. Paul Getty Museum. An independently incorporated organization (with 501-C-3 designation from the IRS) AMICO is governed by its members, who see participation as part of their educational mission. Membership in the Consortium is open to any non-profit institution with visual collections it wishes to make available to a broad, educationally oriented audience.

AMICO links its members and their collections to a wide variety of educational users and organizations. Through data distributors like the Research Library Group (RLG) and OhioLINK, the AMICO Library is now available for use by more than one-million undergraduates, researchers, professors and staff at more than 170 colleges and universities of every size and type, in the USA, the Netherlands, and in the United Kingdom. AMICO is also presently testing methods and creating plans for distributing The AMICO Library to K-12 schools and public libraries in the United States. As an organization, AMICO was the first to bring such a broad-based network of museums and users together in an on-going collaboration. Our activities involve more than 200 organizations that create and use digital museum documentation.

Within its collaborative structure, AMICO brings together some of the most important human resources in museum documentation and digitization. Professionals at AMICO and in AMICO member institutions are involved in many museum and digital library standards projects, including the Consortium for Computer Interchange of Museum Information (CIMI), the NISO Image Metadata Initiative and the Dublin Core, MARC formats for archives and visual museum, the *Art and Architecture Thesaurus*, the *Union List of Artists Names*, and the *Categories for Description of Works of Art*. We also maintain professional, membership, and contractual relationships with the Artists Rights Society (ARS), the College Art Association (CAA), the Museum Computer Network (MCN), the National Initiative for Networked Cultural Heritage (NINCH), the Documentation Committee of the International Council of Museums (ICOM/CIDOC), the Canadian Heritage Information Network (CHIN), and many other relevant professional groups and organizations (See References).

The AMICO training approach users will identify how to introduce beneficial changes at every stage of the life-cycle of information capture – from the earliest encounter of a curator with an object being considered for acquisition, through the latest loans, conservation assessments and publicity releases. Any digital documentation program should acknowledge the actual (and relatively limited) practical requirements for uniformity in construction of shared resources, providing a practical focus for otherwise abstract and theoretical guidelines. AMICO's experience is that museums trying to

follow similar guidelines and implement the same standards do not necessarily create consistent content because existing “best practices” guidelines and standards typically lack sufficiently detailed implementation guidelines. *AMICO’s hard-won experience in creating four editions of The AMICO Library (the 2000 edition documented over 65,000 works of art), combined with the best current documentation practices, will produce clear and usable end-to-end documentation methods of benefit to museums nationwide.*

AMICO involves museums of all shapes and sizes, with differing levels of experience and resources, which represent the full range of ways that museums organize their work and assign responsibilities. To meet the needs of this diverse clientele, representative of museums nationally, the training program analyses workflow within the museum. Training modules will be structured around tasks in documentation, independent of a specific assignment of responsibilities, introducing best practices where they will have the greatest impact on quality. Training materials will be designed in modular sections to allow individual institutions to structure their learning according to their own needs.

Adaptability

Digital documentation issues are cross-departmental, cross-institutional and relevant for all types of museum. Whether a museum has an entire department devoted to collections documentation, registration, photography, conservation, or provenance research, or only occasionally performs these tasks spreading responsibility throughout the staff or with contractors, the digital documentation that results can be used more effectively through planning and training. Some departments or functions within the museum “consume” information first generated in other tasks; others produce or initially acquire information used throughout the institution. Influencing how data is managed in those places that have the greatest impacts on future in-house and external uses will exert the greatest influence over the efficiency and effectiveness of the overall digital documentation process. These results are generalizable and adaptable across museums.

Whether a museum is conducting multiple digitization projects, or just embarking into the digital realm, improving digital documentation practices (which we define as reducing costs and efforts and increasing quantity and quality results) begins with a review of current methods; museums must identify the documentation produced across departments and flag what is not incorporated into the digital stream. Each institution needs to assess the data it creates in terms of guidelines and standards developed to promote long-term management and accessibility of digital documentation. *Training Professionals for Digital Documentation in Museums* will enable any museum to complete the planning process necessary for a digital documentation project.

Our professional training will also include recommendations for the overhaul of existing practices. *Training Professionals for Digital Documentation in Museums* is designed to address specific issues relevant for all museums through modular training plans that are adaptable, both in terms of which staff would be exposed to which training exercises, and in terms of the methods by which staff are trained. Two distinct methods of delivery for the training materials will be developed and tested during this project: workshop-based group training and workbook-guided self-study. Our goal is to develop materials that will deliver needed professional training as effectively as possible. Not every institution (or individual) will best be suited to one approach.

The following modules will be delivered as workshops and provided in 4 workbooks for self-study:
Workshop 1 (Day 1) *Analysis of Collection-Related Documentation and Interpretation Sources*

- (Day 2) *Defining In-House Documentation Practices*
Workshop 2 (Day 1) *Data, Image and Multimedia Acquisition and Capture*
(Day 2) *Long-Term Usability of Digital Documentation*

Module 1: Analysis of Collection-Related Documentation Processes

Taking advantage of workflow is the critical issue for integrated information management in any museum. Transformation of workflow will be central to the implementation of professional museum digital documentation practices. Workflow is also the place to begin in order to understand the differences between individual museums and determine how practices within each area can be harnessed effectively through professional training in digital documentation. By analyzing information creation processes up front, participants will begin to develop “buy-in” from critical team members. This module will begin to reveal the overall benefits of new digital documentation methods. Concretely, each person or department involved in creating documentation will be identified and the current documentary sources they create and use enumerated. Sources of existing digital documentation such as word-processing text, images captured digitally or scanned, sound recordings, databases and numeric information from sources such as conservation instruments, will be located and made part of the conceptual universe of digital documentation.

As-is diagrams of current procedures created in this module will be revisited subsequently as participants develop new workflow plans that streamline the overall process, or identify the authoritative sources for particular kinds of information created in the museum. After completing the first module, participants will understand the relationship between different sources of documentation, both digital and not-yet-digital, in their current environment.

Module 2: Defining In-House Documentation Practices

The next step in improving the way that digital documentation integrates across museum departments is to analyze its content. Specific pieces of information may link one resource to another (or fail to do so), or serve as authoritative information about a collection object. Through understanding how these relatively few elements of information work, or fail to work, within each existing in-house recording system, and across those systems, participants will be prepared to identify needed changes. In this training session, in-house and external standards will be examined to see how they do, or could, contribute to making better digital documentation.

This module’s exercises and the detailed analysis participants will perform during and after the group session focus on the concrete information requirements within the previously analyzed workflow. They also explore how data is – or could be – accessed (current indexing methods) and is displayed (current reporting capabilities). The requirements for data when it is exported from one system to another or linked across systems in a neutral environment will also be considered. In each case, methods will be employed that identify the costs and benefits for digital documentation within existing in-house environments and beyond the walls of a museum.

Module 3: Data, Image and Multimedia Acquisition and Capture

Digital documentation is created in-house or acquired from outside sources based on a specification. Refining the articulation of that specification and codifying the methods by which digital documentation enters museum systems is essential for accurate, efficient, complete and standard data acquisition – all characteristics that add to digital documentation’s utility over the long-term. The project participants, and other professionals who follow them, will examine their in-house digital

documentation processes, for text, image, sound and multimedia capture. Criteria for selecting appropriate technological methods from the wide variety of possibilities will be defined. The application of each criterion will be assessed within the context of institutional workflow and vis-à-vis the content of existing data repositories. In this module, the participants will learn how to make these decisions, and why.

Those institutions just embarking into the digital realm gain an advantage because they can learn from the examples of others. Some early museum digitization projects adopted proprietary and restricted approaches. As professional practices evolved, museum staff realized that technology should be open, accessible, and adaptable. Early adopters need guidance to make the switch to open solutions. The methodologies required to integrate digital documentation in data, text, image, sound and multimedia resources exist, but they need to be implemented within the contexts identified previously in workflow and repository analyses. In this module, content representation standards will be reviewed and integrated into the adopted workflow solutions.

Module 4: Long-term Usability of Digital Documentation

Systematic consideration of long-term sustainability has not been a formal part of documentation systems planning in most museums. Although the issue of longevity is woven into all of the concerns reviewed in previous modules, it deserves special attention. Requirements for data interchange, data migration, and data re-use need to be factored in to methods adopted throughout the institution. Otherwise substantial and unexpected expenses and efforts will be required to maintain the digital documentation, and large lump sum expenses will be incurred to convert or recover data previously available in digital form. In this module, such technical and budgetary calculations will be identified and their implications integrated into the overall plan.

While the future can be intimidating to consider, with careful planning and communication it can be embraced for the opportunities that it can offer. Participating professionals will be encouraged to think of their museums as permanent nodes in the global digital cultural library.

Training Professionals for Digital Documentation in Museums provides the professional skills needed for museum collections documentation practices to cumulate into quality content, usable throughout the museum, for educational (or e-commerce) purposes.

Design

The project is designed to build on knowledge already acquired by AMICO as an institution and by its member museums in the process of digitally documenting their collections and merging that documentation into The AMICO Library. This experience will be subject to rigorous evaluation by an Advisory Committee and from AMICO staff including a full-time Project Coordinator and half-time Principal Investigator (also responsible for the production of the AMICO Library). Quantitatively measured results will be compared to baseline measurements of the documentation experiences of members before training.

AMICO members have conducted workflow analysis and, through the AMICO Editorial, Technology, Rights and Users and Uses Committees, they have reviewed methods and made recommendations regarding best practices. Since 1997, in face-to-face meetings and on electronic discussion lists, AMICO members have explored how other museums do their digital documentation work, and have assessed how documentation from other institutions compares to

their own efforts. We have recorded our findings in “How to AMICO” guides for members, the first step towards articulated professional practices.

AMICO has exceptional human resources at its disposal. As outlined above, AMICO staff and members are actively involved in national and international standards development activities. AMICO’s Executive Director, Director of Strategy and Research and Production Director (the project PI) bring extensive experience in consortial collaboration and project management for large-scale computerization and digitization projects. All have conducted the kinds of systems analyses required for improved cross-departmental digital documentation.

AMICO staff and project staff will be responsible for research, analysis and drafting. Each module will be reviewed by the Advisory Committee, and tested and evaluated by a total of twelve AMICO Member museums, representing a broad spectrum of institutional types and sizes. Baseline evaluation of digital documentation will be created by AMICO and project staff. The effectiveness of the professional training program will be evaluated by comparing this baseline data to similar samples taken after workshop and self-study training. The project will be conducted in four phases:

Phase One begins the project with two months of detailed planning and baseline documentation. Participants will be notified, the Project Co-ordinator will be hired, the project Web site will be constructed and launched, and detailed project plans will be developed and reviewed. AMICO’s Executive Director, the Director of Research and Director of Production (PI) will prepare the baseline measures (derived from analysis of prior year costs, labor, and quantities and qualities of digital documentation). These measures, applied to the twelve AMICO museums participating in the training programs, will be the foundation for assessing the success *Professional Training for Digital Documentation in Museums* and serve as the basis for decisions about revisions to the training modules.

Phase Two begins three months into the project. Working under the direction, and with the assistance, of other AMICO staff, the Project Co-ordinator will review the content of existing training programs (such as the “School for Scanning”, the Library of Congress digital documentation guidelines, etc.) and relate materials covered there to the four module themes. The PI will conduct a review of published literature and create an annotated bibliography. Topics identified in the literature review and analysis of existing training materials will be reviewed and augmented by the Advisory Committee. An outline of each module will be submitted for review by all AMICO members who will be encouraged to identify other areas they believe need formal guidance. Once topics are set, the Principal Investigator will draft a detailed outline of each module. These will be augmented by expert advice from specialists at AMICO member institutions. Drafts of each curriculum unit will be reviewed by the Advisory Committee. Four draft workshop plans and four draft workbooks will be produced in this phase.

Phase Three beginning in the seventh month of the project (which corresponds to the end of one year of the AMICO contribution cycle), the PI will teach each of the four workshops for staff of the participating museums. A two-day workshop devoted to the first two topics will be followed, after an interval of about two weeks, by a second session devoted to the final two topics. Participating museums will have the benefits of the full workshop series before their next AMICO annual contribution cycle begins; the quality of the digital documentation submitted then can be used as a basis for assessing the impact of the training. Each workshop will be evaluated by the participants,

and reviewed by the instructor. The workbooks will then be revised, refined, and offered to a second group of six AMICO member museums for use in self-study training. The results of AMICO contribution assessments for these self-study museums can then be compared with those of the museums with had the benefits of workshops, and to museums with no formal training. Four revised workshop outlines and workbooks will be produced and data for assessing the effectiveness of workshops and self-study will be collected and analyzed in this phase.

Phase Four occurs in the final two months of the project. A final evaluation will be conducted that assesses and reports outcome-based results. This evaluation and edited versions of each module (workshop curriculum and workbook) will be prepared for publication, printed and placed on the Web. After the formal conclusion of the project, AMICO will distribute the printed product, *Training Professionals for Digital Documentation in Museums* to participants, AMICO members and professional organizations, and fulfill individual orders as long as supplies last. AMICO will maintain the Web site for local printing of the workshop plans and workbooks, and will enhance and update training materials for use in member training and publication on the Web.

Project Evaluation

Training Professionals for Digital Documentation in Museums will be informed by three evaluations:

- 1) an analysis of existing digital documentation practices and their results, as measured by quantitative assessment of cost, effort, quantity and quality of output and compared to measures of these practices, however modified, after a cycle of training,
- 2) an Advisory Committee review of the training materials, and an assessment of the workshop and workbooks by both workshop and self-study participants, and
- 3) a qualitative assessment of the workshop and self-study training and its impact, by the participants in these programs after they have had a year in which to implement the recommendations and test the results through a full AMICO contribution cycle.

The workshop curricula and self-study workbooks will be refined and ultimately evaluated, based on their ability to influence actual digital documentation. The training programs will be tested and qualitatively evaluated by six participating AMICO Member museums in workshops, and six museums using self-study workbooks. The recommendations of these participant-evaluations will be incorporated into the final drafts.

The foundation for all evaluation will be an assessment of the digital documentation practices of the participating museums in the year before training. This assessment will examine four dimensions of digital documentation practices and products: the *personnel* effort involved; the *cost* (including technology costs using a life-cycle model); the *quantity and range* of documentation made digitally available; and the *quality* of the data (with special attention to its conformance to the kinds of standards that will ensure its longevity and utility over time). AMICO has had two years of experience gathering this information from members already and through that effort has learned to focus on specific data that museums are able to provide and which can gauge the extent of staff time, institutional cost and documentation quantity and quality. Baseline assessment will be conducted during the first two months of the project by the Director of Research and the Production Manager using data from the year 2001 AMICO contribution cycle (September 2000 to end of March 2001). It will be updated from data from the AMICO year 2002 cycle (September 2001-March 2002), just before the workshop training program actually begins.

After the six museums participating in the workshop series have completed their training (scheduled to run May to August 2002), they will prepare digital documentation for the year 2003 AMICO contribution cycle. Assessment of the cost, effort, quantity and quality of data from this cycle will be the basis of the first evaluation of the effectiveness of workshop training and will identify areas in which the workshop plans and workbooks need revision.

A second group of six museums will participate in self-study workbook-based training. The impact of their training will also be assessed from data compiled following the year 2003 AMICO contribution cycle (in May-June 2003). These participants will also provide input into the final revisions of the workbooks and the outcome-based assessment of the overall grant project.

Final evaluation by participating AMICO member museums will focus on the quantitative findings of the outcome-based evaluation and on more qualitative reflection on their experiences. At the AMICO annual meeting in June 2003, participants in the grant project will have a day of focused analysis and reflection, and work with the Principal Investigator, senior AMICO staff and the Advisory Committee on revisions to the products. They will explore issues, such as:

How did each of the participating museums act on training received in this project? How did the museum's participation in *Training for Implementing Digital Documentation in Museums* impact digital documentation processes and/or outcomes? How did staff feel this training contributed to support of the institution's mission and/or personal benefit to the professional? The final evaluation will report measures of the success of the two delivery methods for the training programs in terms of inputs, activities, outputs, and outcomes.

Management Plan and Personnel

The project will be conducted with oversight and involvement of the Executive Director of AMICO, Jennifer Trant, and AMICO's Director for Research & Strategy, David Bearman. Both have significant experience in managing successful collaborations and administering consortia. As well, they are well versed and respected in the international museum information standards and digital library communities (see appended Curriculum Vitae). As Executive Director, Trant will chair the Advisory Committee, including leading professionals from AMICO member museums (see Attachments). As Director of Strategy and Research, Bearman direct the baseline data analysis and outcomes evaluation.

The *Principal Investigator*, Carol DeNatale, is AMICO's Production Manager (see appended Curriculum Vitae). She will oversee the project to produce training materials, and lead the analysis and synthesis/compilation of research. She will lead the workshops and direct the project reporting. She will also manage the activities of the Project Team comprised of the Project Co-ordinator, and Research Assistant and manage the contributions of other permanent AMICO staff.

The *Advisory Committee* will be comprised of experienced professionals from imaging, publishing, collections documentation, educational delivery and multimedia technology management areas of museums who will review and approve plans. This group will also define evaluation criteria for the project, and assess the results of the testing sessions. Biographical sketches of the members of the Advisory Committee are appended.

The *Project Coordinator* will be hired to coordinate the daily activities of the project. This position will report directly to the Principal Investigator as a temporary full-time AMICO employee. The Project Coordinator will ensure that the project tasks are conducted in a timely fashion, conduct research where necessary, draft reports, develop the content and update the project web page, moderate among participants, and coordinate the production of the training materials. A Job Description for this position is appended.

The *AMICO Technical Director* will provide technological and programming support and assist in the extraction and analysis of digital documentation contributed to The AMICO Library.

The *AMICO Communication Director* will direct the design of print and Web materials for the project and ensure their integration into AMICO's overall communications and training programs.

A *Graduate Research Assistant* (museum studies or library science) will provide support to the Principal Investigator and other project staff during research, data analysis, and compilation.

The *Training Participants* will be selected by the twelve AMICO member institutions that will participate in training (six employing the workshop training method and six through self-study). Each participating museum will establish project teams representing each department or area of responsibility that is likely to be involved in digital documentation (typically including collections management, education, publications, rights management, information technology, photography and curatorial). Each team will be asked to select two members to participate in the 2, two-day workshop sessions (each session will present two workshop topics). A second group of personnel from six additional museums will use the four workbooks in self-directed training sessions. Entire teams will be involved in providing data from these museums as part of the baseline.

The selection of museums will be made by the AMICO Executive Director, Director of Strategy and Research, and Project Principal Investigator, to represent a range of collections/staff/budget sizes, previous digital experience and technology skills, and a varying of organizational cultures (AMICO includes public, private, and university museums).

Dissemination

Communication and dissemination are integral to this project. From the inception of the project, an area on the high-traffic AMICO Web site (<http://www.amico.org>) will inform the community of the project and its agenda, provide access to the literature review and annotated bibliography, and solicit review and input from a broad array of museum professionals. AMICO will maintain a project on-line discussion list as a forum for review and comment, and will make its archive accessible on the Web.

The training materials that are created by the project will, likewise, be widely disseminated. Physically, the materials will be packaged in a ring binder. Component sections can then be re-sequenced and reconfigured as needed for teaching and can be easily updated as new formats and standards become available. Four workbook-like products will be published in hard copy, and distributed electronically over the Web. The physical workbooks will be produced in ring binders, so that sections of the training program can be reorganized based on institutional responsibility and requirements and to make it possible to easily update their contents.

A limited number of the workbook binder series will be distributed free of charge to all AMICO museum members, to all participants in the training session, to all Advisory Committee members, and to selected professional organizations and publications for review. The printed workbook series, *Training Professionals for Digital Documentation in Museums* will also be distributed on request at cost. The professional training program will be widely advertised through press releases to professional journals and newsletters and on electronic discussion lists of professional organizations.

Sustainability

The Art Museum Image Consortium (AMICO) is itself a sustainable, long-term program for digital documentation, so the creation of sustainable methods and professionally trained digital documentation staff are central to its mission. AMICO is committed to publishing *Training Professionals for Digital Documentation in Museums* and to maintaining and distributing it after the grant cycle has ended. The program developed under this grant will be integrated into AMICO's on-going member services and AMICO will offer the workshops based upon it in venues such as the AAM, MCN and Museums and the Web conferences.

Training Professionals for Digital Documentation in Museums is a first step in a long-term effort to professionalize museum digital documentation practices. Just as AMICO will continue to develop, refine, and expand The AMICO Library, so we plan to incorporate the lessons and results of this training program, into our own training and institutional practices. We will pass necessary skills on to both exiting and new members, to our users, and to others through regular service activities and via our many organizational affiliations and cross-institutional projects. Thus the training programs initiated in this project will be maintained, continuously upgraded and used by future generations of museum digitization systems and staff – not just within AMICO, but for the entire museum community.

In the on-going process of acquiring and integrating digital documentation from its members, AMICO is continually confronted with rapidly changing technology and evolving organizational structures. By developing a professional training program that communicates an awareness of best practices and instilling attention to standards and workflow in museum digital documentation projects, we hope to assist museums in adapting to the changing organizational demands of technology-based projects. Our mission is the creation of a rich digital library of museum holdings with deeper and longer lasting content.

Digitization does, and will, continue to happen, both at museums and elsewhere. That is no longer the issue. What is of prime concern is how well this will be done, and how much backtracking will occur later to correct problems and inconsistencies introduced during the early stages of implementation. *Now* is the moment that this national program needs to take place, *after* museum digitization has begun on a national scale but *before* everything is too established to change.

Training Professionals for Digital Documentation in Museums will build an outcome-validated curriculum. We are confident that the project will strengthen American museums as they face the challenges of responding to, and initiating as, cultural institutions in a digital age.

MUSEUM RESOURCES FOR ELECTRONIC DOCUMENTATION

AAM (American Association of Museums) (<http://www.aam-us.org/index.htm>)
Professional Education Programs- (<http://www.aam-us.org/profed.htm>)

AHDS (Art and Humanities Data Service - UK) (<http://ahds.ac.uk/>)
Archaeology Data Service (<http://ads.ahds.ac.uk/project/ahrb.html>)
History Data Service (<http://hds.essex.ac.uk/>)
VADS (Visual Arts Data Service) (<http://vads.ahds.ac.uk/>)

AMICO (Art Museum Image Consortium) (<http://www.amico.org/>)

CIMI (Consortium for the Computer Interchange of Museum Information)
(<http://www.cimi.org/>)

CHIO (Cultural Heritage Information Online) (<http://www.cimi.org/projects/chio.html>)

CHIN (Canadian Heritage Information Network) (<http://www.chin.gc.ca/>)

EMII (European Museums' Information Institute)

European Standards Survey (<http://www.emii.org/map/index.htm>)
EVA (Electronic Imaging & the Visual Arts) (<http://www.vasari.co.uk/eva/>)
Vasari Project (electronic imaging in the visual arts) (<http://www.vasari.co.uk/index.htm>)
VASARI is engaged in research work and also provides strategic consultancy in the cultural sector.

GRI (Getty Research Institute) (<http://www.getty.edu/research/>)
AAT (Art & Architecture Thesaurus) (<http://www.getty.edu/research/tools/vocabulary/aat/>)
CDWA (Categories of the Description of Works of Art)
(<http://www.getty.edu/research/institute/standards/cdwa/>)
MESL (Museum Educational Site Licensing Project)
TGN (Thesaurus of Geographic Names) (<http://www.getty.edu/research/tools/vocabulary/tgn/>)
ULAN (Union List of Artist Names) (<http://www.getty.edu/research/tools/vocabulary/ulan/>)

ICHIM (International Cultural Heritage Informatics)
(<http://www.archimuse.com/ichim2001/index.html>)

ICOM (International Council of Museums) (<http://www.icom.org/>)

CIDOC (The International Committee for Documentation) (<http://www.cidoc.icom.org/>)

IMLS (Institute of Museum and Library Services) (<http://www.imls.fed.us/>)
NCLIS (National Commission on Libraries and Information Science)
(http://www.imls.gov/about/abt_ncli.htm)
NMSB (National Museum Services Board) (http://www.imls.gov/about/abt_nmsb.htm)
Museums, Libraries, and the 21st Century Learner
(<http://www.imls.gov/whatsnew/21cl/21clintro.htm>)

MCN (Museum Computer Network) (<http://www.mcn.edu/>)
e-Spectra (<http://www.mcn.edu/espectra/>)

MDA (Museum Documentation Association) (<http://www.mda.org.uk/>)

MIP Museum Informatics Project – UC Berkeley (<http://www.mip.berkeley.edu/mip/>)
MOAC Museums and the Online Archive of California
(<http://www.bampfa.berkeley.edu/moac/>)

NEA (National Endowment for the Arts) (<http://arts.endow.gov/>)

NEH (National Endowment for the Humanities) (<http://www.neh.gov/>)

NINCH (National Initiative for a Networked Cultural Heritage) (<http://www.ninch.org/>)
*Guide to Good Practice in the Digital Representation and Management of Cultural Heritage
Materials* (<http://www.ninch.org/PROJECTS/practice/rfprfp1.html>)
International Database of Digital Humanities Projects
(<http://www.ninch.org/PROJECTS/data/data.html>)

VRA (Visual Resource Association) (<http://www.vra.oberlin.edu/>)
The Core Categories for Visual Resources (www.oberlin.edu/~art/vra/wc1.html)

LIBRARY RESOURCES FOR ELECTRONIC DOCUMENTATION

ALA (American Library Association)

MARBI (Machine-Readable Bibliographic Information Committee)

(<http://www.ala.org/alcts/organization/div/marbi/marbi.html>)

Arizona State Library, Archives and Public Records (<http://dlapr.lib.az.us/digital/index.html>)

ARL (Association of Research Libraries) (<http://arl.cni.org/>)

CNI (Coalition for Networked Information) (<http://www.cni.org/>) Founded in 1990 by the ARL, Educom, and CAUSE

ARLIS/NA (Art Libraries Society of North America) <http://www.lib.duke.edu/lilly/arlis>)

CLIR (Council on Library and Information Resources) (<http://www.clir.org/>)

DLF (Digital Library Federation) (<http://www.clir.org/diglib/dlfra.htm>)

Commission on Preservation and Access (<http://www.clir.org/programs/cpa/cpa.html>)

CORDIS (Community Research and Development Information Service)

ACTS - Advanced Communications Technologies and Services

(<http://www.cordis.lu/acts/home.html>)

Viseum Project (virtual museums international)

<http://www.staff.ecs.soton.ac.uk/~km/viseum/viseum.html>)

IST (Information Society Technologies Programme) (<http://www.cordis.lu/ist/home.html>)

AMICITIA-Asset Management Integration of Cultural heritage In The Interchange between Archives (<http://dbs.cordis.lu>)

EVAN – Electronic Imaging & the Visual Arts Networking

ESPIRIT (European Union Information Technologies Program)

(<http://www.cordis.lu/esprit/home.html>)

CRL (Center for Research Libraries)

Colorado Digitization Project (<http://coloradodigital.coalliance.org/toolbox.html>)

Dublin Core workshop series (<http://purl.org/DC>)

JISC - Joint Information Systems Committee (<http://www.jisc.ac.uk/>)

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The Cedars Project (<http://www.leeds.ac.uk/cedars/>) The main objective of the project is to address strategic, methodological and practical issues and provide guidance in best practice for digital preservation.

CAMiLEON Creative Archiving at Michigan and Leeds: Emulating the Old on the New. (http://www.si.umich.edu/CAMILEON/Camileon_Plan.htm) Project funded by JISC and NSF, and will evaluate emulation as a digital preservation strategy by developing emulation tools, cost-benefit analysis and user evaluation.

LOC (Library of Congress) (<http://www.loc.gov>)
American Memory Project - Building Digital Collections: Technical Information and Background Papers (<http://memory.loc.gov/ammem/ftpfiles.html>)
Getting the Picture: Observations from the LOC on Providing Online Access to Pictorial Images (<http://memory.loc.gov/ammem/techdocs/libt1999/libt1999.html>)
EAD (Encoded Archival Description) (<http://www.loc.gov/ead>)
LOC/Ameritech: Lessons Learned - National Digital Library Competition (<http://lcweb2.loc.gov/ammem/award/lessons/lessons.html>)

NARA (National Archives and Records Administration) (<http://www.nara.gov/>)
EAP (Electronic Access Project) (<http://www.nara.gov/nara/vision/eap/>)

NEDCC (Northeast Document Conservation Center) (<http://www.nedcc.org/>)

OCLC (Online Computer Library Center) (<http://www.oclc.org/>)

RLG (Research Libraries Group) (<http://www.rlg.org/>)
REACH (Records Export for Art and Cultural Heritage project) (<http://www.rlg.org/reach.html>)
VISION (<http://www.rlg.org/vision.html>). A test of the VRA core.
DigiNews (<http://www.rlg.org/preserv/diginews/>)
Guides to Quality in Visual Resource Imaging (<http://www.rlg.org/visguides/>)
RLG Working Group on Preservation Issues of Metadata: Final Report (<http://www.rlg.org/preserv/presmeta.html>)
Preserving Digital Information: Final Report and Recommendations (<http://www.rlg.org/ArchTF/>)

SAA (Society of American Archivists) (<http://www.archivists.org/>)

UKOLN (UK Office for Library and Information Networking) (<http://www.ukoln.ac.uk/>)

EXISTING DIGITIZATION TRAINING SESSIONS FOR PROFESSIONALS

AAM - American Association of Museums (<http://www.aam-us.org/index.htm>)
Professional Education Programs- No digitization programs currently offered, but other workshops typically involve from 1-3 days of in-depth training.
(<http://www.aam-us.org/profed.htm>)

AHDS - Arts and Humanities Data Service (<http://ahds.ac.uk/>). Working on behalf of the academic community to collect, catalogue, manage, preserve and promote the re-use of scholarly digital resources. AHDS does not address museum needs specifically. They do provide a technical advisory service for researchers in the creation and use of digital data, and in the development of appropriate project plans where digital data are important.

Arts and Humanities Data Service: Archaeology Data Service
<http://ads.ahds.ac.uk/project/ahrb.html>
Arts and Humanities Data Service: History Data Service
<http://hds.essex.ac.uk/>
Arts and Humanities Data Service: Visual Arts Data Service
<http://vads.ahds.ac.uk/>

Cornell University Library, The Department of Preservation and Conservation.
The Cornell workshops and tutorials are designed primarily with libraries in mind, and do not address museum specific issues.

Digital Imaging for Libraries and Archives by Anne R. Kenney and Stephen Chapman.
<http://www.knaw.nl/ecpa/news/books/kenney.htm>

Moving Theory into Practice: Digital Imaging Tutorial by Anne R. Kenney and Oya Y. Reiger (<http://www.library.cornell.edu/preservation/tutorial/contents.html>).
This tutorial accompanies the workshop described below, and offers base-level information on the use of digital imaging to convert and make accessible cultural heritage materials. It also introduces some concepts advocated by Cornell University Library, in particular the value of benchmarking requirements before undertaking a digital initiative. You will find up-to-date technical information, formulas, and reality checks, designed to test your level of understanding. The workshop is intended for librarians, archivists, curators, administrators, technologists, and others who are contemplating or implementing digital imaging programs. The workshop will be structured around nine key areas: selection, digitization, quality control, metadata creation, image processing, systems building, access, preservation, and management. Three one-week sessions are offered during 2001. Many museum staff do not have the time and financial resources to participate, nor do the workshops address museums specifically, thus the need for the workbook series outlined in this grant proposal.

CHIN - Canadian Heritage Information Network (<http://www.chin.gc.ca/>)
You must subscribe annually to these on-line resources in order to participate.

Collections Management Software Selection

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http://www.chin.gc.ca/Resources/Collect_Mgmt/English_course/index.htm

Capture Your Collections: Planning & Implementing Digitization Projects

<http://www.chin.gc.ca/Resources/Digitization/English/index.html>

The course has been developed to address the needs of those working in or with museums embarking on a project entailing digitizing images from their collections. Information is provided to plan for and establish a digitization program. On-line course modules cover planning, budgeting, establishing your requirements, and implementing your project. E-mail access to instructors.

This course is specifically about digital imaging projects, and does not address all of the other facets of electronic documentation in the museum environment.

**HATII - The Humanities Advanced Technology and Information Institute:
Glasgow Digitisation Summer School 2001**

(<http://www.hatii.arts.gla.ac.uk/DigiSS01/index.htm>)

Archivists, librarians, and museum professionals. Workshops are one week each and build skills in understanding the principles and best practice in the digitisation of primary textual and image resources. Many museum staff do not have the time and financial resources to participate, thus the need for the workbook series outlined in this grant proposal.

JISC - Joint Information Systems Committee (<http://www.jisc.ac.uk/>)

TASI - Technical Advisory Service for Images

<http://www.tasi.ac.uk/training/bookingform.html>

Workshops for Image Capture

Workshops for Digitisation Projects

Workshops for Using Digital Images

These are a series of one-day workshops targeted at very specific topics for specific levels of professionals from curators & educators to computing staff or project managers. There is no mechanism to pull all of these topics together into a cohesive training package for an entire team of museum staff.

Digital Images in Multimedia Presentations –On-line training session.

<http://www.tasi.ac.uk/training/dimp/dimp1.html>

The information contained within these TASI training pages provides guidelines and instructions on the preparation of digital images for use in electronic materials such as WWW pages, and multimedia presentations.

HEDS – Higher Education Digitisation Service (<http://heds.herts.ac.uk/>)

Preservation Management of Digital Materials Workbook: a pre-publication draft

<http://www.jisc.ac.uk/dner/preservation/workbook/workbook.pdf>

Because the rapidly increasing volume of digital information is occurring during a time when the long-term access to these materials is not assured, a need has been created for guidance on digital

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preservation issues. This workbook is being produced as one response to that need, but does not address Museum Issues specifically.

MCN – Museum Computer Network (<http://www.mcn.edu/conf.html>)

Professional education workshops are offered for half or full days, and typically address very specific topics, or provide too general of an overview.

1999 *Digital Access to Cultural Heritage Resources: Implementing the Dublin Core in Museums*, Angela Spinazze, ATSPIN Consulting and Jay Hoffman, Managing Director, Gallery Systems. Sponsored by the Consortium for the Computer Interchange of Museum Information.

Strategic Information Management for Museums in the 21st Century, *Jennifer Trant & David Bearman, Partners, Archives & Museum Informatics*

2000 *Digital Access Projects: Descriptive Metadata*, Mary Elings, Bancroft Library

Digital Access Projects: Digital Imaging Metadata, Guenter Weibel, UC Berkeley Art Museum and Pacific Film Archive

Creating a Digital Imaging Lab, Carol Hernandez, J. Paul Getty Museum

Museum Information: The Executive Summary, James Blackby, Museum of America and the Sea

Museums and the Web (<http://www.archimuse.com/conferences/mw.html>)

Professional education workshops are offered for half or full days, and typically address very specific topics, or provide too general of an overview.

2001 *Strategies for Digitization in Museums: Leveraging Investments to Succeed*, Alan Newman, Art Institute of Chicago

2000 *Managing Digital Access Projects*, Peter Hirtle, Cornell University, and Carol DeNatale, Luna Imaging Inc.

Technical Strategies for Digitization for Museum Applications Alan Newman, Art Institute of Chicago

Developing Information Policies for the Web, Michael Shapiro

NEDCC Northeast Document Conservation Center and NPS – National Park Service

The School for Scanning is centered around the documentation of paper-based collections, and does not address the myriad types of objects that exist in museum collections.

School for Scanning Series – (<http://www.nedcc.org/sfsinfo.htm>)

Since the complexion of this conference evolves with the technology, it would be beneficial to attend even if you have participated in a previous School for Scanning program. An audience of 200 or more attendees is expected. Three day workshops for Administrators within cultural institutions, as well as librarians, archivists, curators, and other cultural or natural resource managers dealing with paper-based collections, including photographs. These workshops are only offered occasionally.

NPS - National Park Service: Museum Management Program (<http://www.cr.nps.gov/csd/>)

These are very general topics

Museum Handbook

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<http://www.cr.nps.gov/csd/publications/handbook.html>

More workshops...

<http://www.cr.nps.gov/csd/activities/training.htm>

University of North Texas: Distributed Learning

Digital Image Managers for the New Millenium: A Museum / University Collaboration
(<http://courses.unt.edu/shastings/HastingsWWW/index.html>)

Certificate of Advanced Study in Digital Image Management (24 credit hours)

Students apply to and are admitted by the Graduate School and the School of Library & Information Sciences at the University of North Texas. The University of North Texas and the African American Museum in Dallas are partners in this program, designed to produce expert managers of digital images and information.

University of Victoria, British Columbia: Cultural Resource Management Program

The programs provide accessible professional development opportunities for people involved with museums, galleries, heritage agencies, and other cultural organizations throughout Canada and beyond.

Division of Continuing Studies – Distance Learning Class (<http://www.uvcs.uvic.ca/crmp/>)

Museum Information Management (<http://www.uvcs.uvic.ca/crmp/deha488n.htm>) with James R. Blackaby, Director of Internet Strategies and Information Services with Mystic Seaport in Connecticut. This unique Internet-based course explores the multi-layered nature of museum information, examines the ways in which it is understood, organized, and accessed, and goes on to provide frameworks to support systematic and integrated organization and management. Participants receive access to dedicated website. The course was offered in the on-campus format for one week during February 2001.

This workshop is specific to the management of museum information, but it does not address digital imaging processes, and other pertinent topics related to museum digitization.

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State University System of Florida
Publication of Archival, Library and Museum Material (PALMM)
National Standards and Resources
<http://susdl.fcla.edu/strucmeta/national.html>

Attachments

AMICO has experience in developing training materials, and in implementing programs to support a diverse group of member museums. In working with thirty-two museum members, it has become more and more apparent that there is a growing need for professional training in managing digitization projects in museums. There is a tremendous amount of existing material on which to draw, at the same time, the myriad choices are confusing, and in most cases the technical aspects of training are geared toward libraries, rather than museums. In none of these materials are all the elements of successful museum digitization presented together in a cohesive manner.

The Users and Uses Committee of AMICO met formally in June of 2000, and specifically requested "A step-by-step 'How To AMICO' document" to provide in-depth information on team development, access to The AMICO Library, technical discussions and examples of member institution workflow, as well as schedules, and suggested activities for AMICO-focused interns. At the same meeting, the Editorial Committee of AMICO noted that, "the Contribution Management System interface would benefit from detailed instructions and help files." Everyone agreed that the guide for educators and librarians was another way of specifically addressing the needs of the users.

AMICO has begun to address these gaps in a preliminary way. Contained in the Attachments section is the guide that AMICO developed as training material for member museums, *How to AMICO: A Guide for Members*. Also, completed but not enclosed, is *How to AMICO: A Guide for Educators and Librarians*, a guide targeted to assist end users with using The AMICO Library. A third guide, *How to AMICO: The AMICO Member Contribution Management System*, is under development.

Also included in this section are the resumes of the project personnel, a job description for the Project Co-ordinator position, and a list of Members of the Advisory Committee. The References section includes a list of training sessions and workshops that have been offered to museum and library professionals. There is also a list of useful museum and library references. In addition, many papers and articles have been written on specific topics of digitization in the museum environment. Collectively, these materials are very useful, but the process to read, compile and understand the implications of various approaches is more than a typical museum can invest in. Through a collective training program, this wealth of pre-existing knowledge on museum digitization can be synthesized and standardized, and presented in an understandable format.