

The Museum of Fine Arts, Boston

Mellon Pilot Project: Open-source Solutions for Sharing Data and Images

In January 2008, three institutions, George Eastman House (GEH), The Metropolitan Museum of Art (MMA), and the Museum of Fine Arts, Boston (MFA), began work on a two-year pilot project to develop open-source solutions for sharing data and images generated as a result of a collaborative conservation documentation project.

Detailed condition monitoring of daguerreotypes in the exhibition *Young America: The Daguerreotypes of Southworth & Hawes* (2005), organized by GEH, demonstrated alarming changes in the condition of the objects during the exhibition period. Curatorial and Conservation staff at GEH and MMA concluded that a higher level of documentation of current condition, as well as research into the material science and deterioration mechanisms of daguerreotypes in general, is imperative to better understand the long-term stewardship needs of these important 19th century photographic images.

Thirty daguerreotypes, representing a variety of conditions and housing histories, selected from approximately 1,500 Southworth & Hawes daguerreotypes in the collections of the three participant institutions, provided data and images for this project. Solutions for sharing information via the web developed in this pilot project are soon to be applied to a comprehensive conservation documentation survey of 255 Southworth & Hawes whole plate daguerreotypes selected from the holdings of the participant institutions. GEH received funding from the Getty Foundation for the whole plate survey, which is scheduled to begin on September 1, 2009. The second survey will run concurrent with this pilot project for a period of four months.

Although text data was and continues to be generated for each daguerreotype, large format, high-resolution images of the objects capture and convey the most useful condition information. GEH staff developed new imaging methods using scanners and microscopy for accurate documentation of daguerreotypes. Conservators reconfigured an Epson 1640XL scanner by removing the top glass plate and inverting it. The inverted scanner, upside down and on stilts, allows space for the safe placement of daguerreotypes under the scanner. This provides the means to document whole plate daguerreotypes with a non-contact imaging approach. A constant illumination source yields high-resolution images of 1600 dpi optical resolution with file sizes ranging from 900 to 1100 Megabytes. In some instances, bent and deformed daguerreotype plates have required scanning from four directions. The scanner's fixed light and lens geometry provides even illumination resulting in image consistency between plates and reproducible conditions for comparative evaluations of images in the future. Variation of lighting conditions in photography would have the effect of producing different results for an image each time a plate was photographed. Daguerreotypes might appear different – not because of a condition change, but because of the lighting. The scanner ensures exactitude of lighting.

Imaging regions of interest will allow for close monitoring and analysis of progressive deterioration such as pitting or tarnish. A Carl Zeiss Discovery V.12 stereo microscope with a 1.0x PlanApo S objective, AxioCam HRc camera, AxioVision ver 4.7 software and a Ludl integrated x-y motorized stage for tiling and/or stitching images were used to examine regions of interest. Some of these images have been integrated into a visual glossary, or illustrated lexicon of condition

terms, for the daguerreotype. GEH conservators, in consultation with MMA and MFA, have attempted to standardize the terms to describe the condition of daguerreotypes based on the terms used in the *Young America* documentation. Twenty-five damage terms were provided, many with synonyms, descriptions of the terms, and example images of damage types.

The multi-directional scans of thirty daguerreotypes together with basic catalogue and conservation survey information about individual daguerreotypes from participating institutions have provided sufficient information for the MFA to proceed with its work of database and website development.

MFA staff has developed a custom database and a prototype image/information-sharing application for use among the three institutions using Google Maps API and open source resources such as MySQL, the CASA Image Cutter and several web-based programming languages including JavaScript and VBScript. The data can be accessed and searched using the online interface. This application is fully accessible on the MFA's dedicated web server via <http://research.mfa.org/mellon>. Security profiles and log-ins were created for staff members from participant institutions who are authorized to view, edit and/or add to the data. At this time, four main levels of access exist: Guest, Viewer, Editor, and Administrator. Some degree of access is also based on the user's affiliated institution. For Viewer access, the following credentials can be used: Username: **research** Password: **crockett**.

During the initial survey phase, access to the data via a shared resource is limited to the three participant institutions. Upon completion of this project, the data will be made available to all interested parties via the World Wide Web, with GEH hosting the completed Southworth & Hawes website. Through development of technological solutions for information-sharing, the Southworth & Hawes resource joins other conservation documentation pilot projects that seek to find efficient solutions for sharing data and images via the web. Whenever possible, the partnering institutions will use existing open-source software, and adapt tools and code to further the goals of this project. The technology for data sharing will be available to others at the close of this project in December 2009.

Database Structure of the Conservation Research Portal MySQL database as of March 2009

