western association
waac
for art conservation
Newsletter

September 2010 Volume 32 Number 3

President's Letter

Marie Labinis-Craft

Dear Membership,

Thank you to all who were able to attend the annual meeting in Portland. We had a wonderful variety of talks ranging from treatments of ceramics, textiles and metals, to materials testing of latex gloves, measuring salts in solutions of archaeological ceramics, and exploring the use of iPad as image based tool for condition reporting. We also had talks on the restoration and conservation of historic buildings and on architectural design relating to issues of collections care such as lighting, and on historic preservation issues.

Guest speakers presented on local and statewide preservation topics. Art DeMuro, owner of Venerable Properties, a firm that develops historic properties, discussed the restoration of the White Stag building block, from the beginning stages of evaluating restoration issues to finding potential tenants, to the obstacles and challenges related to a large-scale project.

Kyle Jansson from the Oregon Heritage Commission discussed issues that state and many historical societies face under the current economic climate and various ways of increasing public awareness of preservation issues.

The Angel's project was led by Tom Fuller of Corvallis, Oregon and Sandra Troon from Portland and took place at the Oregon Nikkei Legacy Center. Five graduate students, four from the University of Oregon's Arts and Administration program, and a 3rd-year student from the conservation program at the University of Delaware, worked side-by-side with Tom, Sandra, and Nicole Nathan, Director of Collections and Exhibits, on improvements of storage of the collections.

The silent auction was a success. $630 was raised and will benefit the Metropolitan Youth Symphony. Thank you to Beverly Perkins for organizing the auction and thank you to all who donated items, especially to Robert Gamblin, who not only donated a set of conservation colors but also provided WAAC members a tour of the new Gamblin paint factory followed by a reception.

New and outgoing board members were announced at the business meeting. Daniel Cull is the incoming Vice President, Molly Gleason and Sean Charette are incoming Members-At-Large, Marie Svaboda and Albrecht Gumlich have finished their terms as of this year. Thank you Marie and Albrecht for your time and service. A $5 dollar increase in membership dues was announced at the business meeting as well. As was mentioned in the last *Newsletter*, the increase is going towards the support of CoOl.

I'd also like to thank the WAAC board for their help with the meeting and special thanks to local conservators Nina Olsson, Elizabeth Chambers, and Robert Krueger, and pre-program intern Jacinta Johnson for their help and support with the meeting.

It has been an honor to serve as WAAC President this past year; planning the annual meeting was a challenging yet very rewarding experience. I encourage you to seriously consider the opportunity when you are asked to run.

My best wishes to our new president, Dana Senge, who is already busy planning and working on the meeting in Austin next year.

Sincerely,

Marie Laibinis-Craft

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Daqna Senge column editor

ALASKA

Ellen Carrlee co-authored two papers on treatment of archaeological basketry with **Dana Senge**. Dana presented on past treatments of waterlogged basketry at AIC, and Ellen presented on a current treatment protocol at the ICOM Wet Organic Archaeological Materials meeting, with weblog postings from the WOAM sessions. She also assisted **Ron Sheetz** in maintenance of the Governor's totem pole, and joined **Scott Carrlee** for a "Minding the Museum" podcast interview with **Dave Harvey**. Upcoming projects involve treatment of a theater organ and implementation of a new PEM datalogger system for the Alaska State Library, Archives, and Museums.

Scott Carrlee taught the spot test workshop with **Nancy Odegaard** at the Kaman Kalyhoyuk Site in Turkey. **Alice Paterakis** organized the workshop for 7 participants from the US, Turkey, and Israel. From Turkey, they traveled to Erbil, Iraq to teach the same workshop at the Collections Conservation and Management Program of the Iraq Cultural Heritage Project which is headed by **Jessie Johnson**. This program is training a future generation of Iraqi conservators. Scott continues to coordinate the work of paper conservator **Seth Irwin**, who has been working in various Alaskan institutions since March. There is no resident paper conservator in the state, and Seth's work has been well received.

Janelle Matz has been primarily working on public art projects: reinstallation of two large canvases at Anchorage International Airport, cleaning a textile work for the Anchorage School District, and preparations for the cleaning and re-installation of 3 large canvases for Fairview Recreation Center.

Monica Shah helped open the last part of the new addition to the Anchorage Museum at the Rasmuson Center, completing the installation of 4 exhibits from the permanent collection and the installation of about 600 objects from Smithsonian collections on loan for the next seven years. In addition, she's been working with Seth Irwin, paper/photograph conservator, on contract working on the treatment of panoramic prints and photograph albums. His project was funded by the Rasmuson Foundation and organized with the help of the Alaska State Museum. Monica will also travel to Washington D.C. to deinstall the last venue of *Masterworks of Yup'ik Science and Survival*, 3 years after the first installation.

Regional Reporter:
Ellen Carrlee

ARIZONA

After a hectic period of exhibit prep for the opening of Phoenix's new Musical Instrument Museum (MIM) **Daniel Cull** can be found working behind the glass fronted visible lab. Daniel is conserving a variety of objects both for exhibition, and more recently for the education department's Experience Gallery, in which visitors get to try out a variety of instruments from around the world. Now that the museum is operational, conservation attention has also shifted towards long term monitoring projects. Daniel is busy working with MIM's technology team and consulting with the museumpests.net working group, to develop an IPM database system to allow the conservation department to track any insect activity within the museum. Away from MIM Daniel recently presented at AAM's annual meeting in LA, and he continues to work on the board of e-conservation magazine, contributing a column to each issue.

Martha Winslow Grimm has been spent the summer working on heavy wool textiles and clothing made of fur, just the right objects for Phoenix's 110 degree heat: thank goodness for air conditioning. The Days of 76 Museum, Deadwood, SD has

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Internet

Articles and most columns from past issues of WAAC Newsletter are available on-line at the WAAC Website, a part of CoOL (Conservation OnLine) hosted by Stanford University Libraries, at http://palimpsest.stanford.edu/waac/.

Deadline

Contributions for the May *Newsletter* should be received by the Editor before **December 4, 2010.**

Western Association for Art Conservation

The Western Association for Art Conservation (formerly, the Western Association of Art Conservators), also known as **WAAC**, was founded in 1974 to bring together conservators practicing in the western United States to exchange ideas, information, and regional news, and to discuss national and international matters of common interest.

Individual Membership in WAAC costs $35 per year ($40 Canada, $45 overseas) and entitles the member to receive the WAAC Newsletter and the annual Membership Directory, attend the Annual Meeting, vote in elections, and stand for office. Institutional Membership costs $40 per year ($45 Canada, $50 overseas) and entitles the institution to receive the WAAC Newsletter and Membership Directory. For membership or subscription, contact the Secretary.

Regional News, continued

contracted with her to treat Navajo rugs and cold weather gear constructed from buffalo and horse hides, part of a Save America's Treasures grant.

This last spring **Linda Morris** received 74 more paper artifacts from the Amerind Foundation in Dragoon, Arizona. Interns **Rachel Shand** and **Alison Pinto** assisted with the condition assessment and treatment recommendations. In May, the staff held a seminar on caring for art, documents, etc. for members of the Friends of Western Art, a non profit group in Tucson.

Brynn Bender and **Dana Senge** began a condition survey of items in storage at Mesa Verde National Park. This also assists the park in move preparations to a new facility off of the mesa. This will, they hope, lessen the need for wildfire evacuation which they have had to do three times already.

Maggie Kipling, **Audrey Harrison**, Dana, Brynn and pre-program intern **Amy Molnar** completed the last few treatments to the 18 historic river boats at Grand Canyon National Park. The boats now wait for fundraising to build the River Heritage Museum which will exhibit the group. Pre-program intern **Renee Rideout** gained experience in the NPS lab for the summer creating storage mounts for ethnographic beadwork and performing minor treatments.

The ASM Preservation Division is currently busy working on upcoming exhibits as well as moving collections to new storage locations. The lab happily expects to have many new students in the fall, including international interns, graduate students, and pre-program conservation interns.

Nancy Odegaard traveled this summer to the Kaman-Kalehoyuk excavation in Turkey and Iraq to teach Spot Testing for Material Characterization with **Scott Carlee**. She has been spending her last week away from the lab with **Teresa Moreno** at the Mt. Lykaion archaeological site in Greece.

In June, Teresa completed a one year sabbatical during which she completed the first year of her PhD research on the conservation and analysis of silver at the Institute of Archaeology, University College London. She spent the month of July working as the lead conservator for the fifth consecutive season at the excavations at the Sanctuary of Zeus on Mt. Lykaion, Greece. She has returned to the Arizona State Museum where she will resume her duties as associate conservator and will be helping to coordinate the conservation of objects for the upcoming exhibit *Many Mexicos: Vistas de la Frontera*, amongst other things.

Gina Watkinson is currently working on condition reports for over 100 objects that will be going into the *Many Mexicos* exhibit. She has been working closely with collections staff to help move the basketry collection.

Marilen Pool will be project conservator on the two year IMLS grant recently awarded to ASM's Preservation Division to conserve a collection of over 700 ceramic vessels, which have been designated as highest priority objects in the Southwest pottery collection.

Christina Bisulca, conservation science research assistant, received a grant from the American Scandinavian Foundation to work at the Museum of Cultural Heritage in Oslo with Susan Braovac and Hartmut Kutzke on their alum project for the Viking Ship Museum.

Molly McGath, conservation science research assistant, spent her summer interning at the Science, Technology, and Business Division and the Preservation and Research Division at the Library of Congress. While there, Molly worked on the instrumental analysis of volatile organic compounds using Solid-phase Microextraction HeadSpace Gas Chromatography and Mass Spectrometry.

Werner Zimmt, continues to research iron corrosion and is now testing commercial corrosion inhibitors used in water borne paints to prevent flash rusting on nails in wood siding.

Esther Echinique, visiting scholar-conservator, was accepted to the anthropology graduate program at the U. of Arizona and will begin her first classes in the fall. Esther is interested in studying archaeological pigments, and the lab hopes to see her again when she gets further into her research.

Regional Reporter:
Brynn Bender

GREATER LOS ANGELES

Over the summer LACMA conservators were busy preparing for the opening of the new Resnick Pavilion. Three exhibitions, *Olmec: Colossal Masterworks of Ancient Mexico; Eye for the Sensual: Selections from the Resnick Collection;* and *Fashioning Fashion: European Dress in Detail, 1700-1915,* inaugurated the new building, designed by Renzo Piano, which opened October 2010.

Ms. Park Chi-Sun, from the Jung-Jea Conservation Center in Korea, will be contracted to conserve an important Korean wall painting from LACMA's Chinese and Korean department. The museum's paper conservation staff will assist Ms. Park and her team with the treatment, repair, and remounting of this large composition depicting Shakyamuni (Buddha) preaching to an assembly at Mount Grdhrakuta, or Vulture Peak. The painting has the same iconography as illustrated in the foreword of the *Lotus Sutra*. The conservation will be done in the Korean ceramics gallery, and the public will be encouraged to observe the year long project.

Jennifer Badger will be joining the paper conservation lab in September for a six month contract. She will assist with the day to day activities in the lab and be available for work on the Korean painting project.

Maria Fusco moved to the east coast last August to begin an assistant conservator position at the museum at the Fashion Institute of Technology in New York. Maria was at LACMA since fall 2009 on an Andrew W. Mellon Fellowship in the Conservation Center's textile lab. **Aisha Wahab** has been accepted to the Art Conservation Program at Buffalo State College for Fall 2010. Currently volunteering at the Detroit Institute of Arts and the Bentley Historical Li brary, Aisha was a pre-program intern at LACMA from 2007-2009.

Patty West and **Teen Conlon** of South Coast Fine Arts Conservation Center, Inc., in Santa Barbara have been very busy this past year. Projects range from work on a large Ramos Martinez mural in a private home in Montecito to the consolidation and cleaning of an overland stagecoach at the Santa Inez Historical Museum and Carriage House. The studio completed several more paintings and sculptures for San Miguel, Santa Barbara, and San Antonio missions. They have now completed work from 18 of the california missions. Patty gave a lecture on the conservation of Mission Art at the California Mission Studies Association conference in late February.

Currently, the studio is busy cleaning a 4100 sq. ft mural by Dan Sayre Groesbeck that resides in the Mural Room at Santa Barbara County Courthouse. The Courthouse had an electrical fire in January of 2010. The murals, along with several paintings, were covered in thick greasy smoke.

Susanne Friend and **Duane Chartier** of ConservArt Associates, Inc. have been busy in the last two months deinstalling and reinstalling murals that they had originally installed and deinstalled. An Inez Storer mural was deinstalled for storage for the Gas Company at the beginning of June and a Judy Baca mural, *La Memoria de Nuestra Tierra*, was removed from one location at USC and reinstalled in another. Susanne Friend and **Alyson Souza** spent several days at the William Andrews Clark Memorial Library (UCLA) restoring the painted case of a salon series B 1926 Steinway piano that had pastoral scenes painted on it by E. T. Mazy.

Rosa Lowinger and **Viviana Dominguez** have recently returned from Port-Au-Prince, Haiti, where they have been examining, preparing the treatment protocol, and doing triage work on important 1950s murals from the collapsed St. Trinity's Episcopal Cathedral. Rosa published a post on WNYC's culture blog on the murals' rescue effort. Rosa was also named one of two associate editors for *Change Over Time*, a new semiannual journal published by the University of Pennsylvania that will feature original, peer-reviewed papers and articles on the history, theory, and practice of conservation and the built environment. Rosa also participated with *COT* Editor-in-Chief Frank Matero and paintings conservator Stephen Rickerby in the Getty Conservation Institute's public lecture panel: "Finishing Touches: Conserving Wall Paintings and Other Architectural Finishes."

Tania Collas and **Liz Homberger** recently "detailed" NHMLAC's 1908 Pierce Great Arrow Touring car in preparation for its entry in the preservation class at the prestigious 2010 Pebble Beach Concours d'Elegance in August. Since opening the two new exhibits *Age of Mammals* and *What on Earth?*, they have barely had time to catch their breath before becoming immersed once again in preparations for *Under the Sun*, a natural and cultural history of Southern California, opening in late 2012.

Yadin Larochette, textile conservator in private practice, continues to work on a variety of projects for private collectors and institutions. Yadin recently worked with staff at the Huntington Library, Art Collections, and Botanical Gardens, establishing protocols for surface cleaning upholstered furniture and carpets. She just completed a condition assessment of the costume and textiles at the San Diego History Center, part of a larger survey funded by the IMLS and facilitated by the Balboa Art Conservation Center. This fall, Yadin will be going to Oaxaca, Mexico, to work for a month at the Textile Museum after attending the North American Textile Conservation Conference board meeting being held there.

November 2, 2010 marked the opening of a contemporary tapestry show, entitled *June Wayne's Narrative Tapestries; Tidal*

Waves, DNA, and the Cosmos at the Art Institute of Chicago. The exhibit commemorates the reopening of the department of textiles and its collections. The show includes eleven tapestries made in France under June Wayne's direction between 1970 and 1974. Each tapestry underwent careful examination for condition and preliminary treatment for exhibition under the direction of **Sharon Shore** at June Wayne's studio on Tamarind Avenue in Hollywood. The work, carried on a one day a week basis over a period of many months, included the efforts of curators, conservators, June Wayne's staff assistants, and most importantly the artist herself. At age 92 June Wayne is equipped with a phenomenal memory for the history of the art scene surrounding the making of the tapestries and is truly a force to be reckoned with.

Regional Reporter:
Virginia Rasmussen

HAWAII

Among the paintings currently being treated at Art Care by **Gregory Thomas**, is an oil on panel, circa 1667, attributed to Jan Brueghel II. The painting, in extremely fragile condition with active flaking and multiple paint loses, required overall consolidation.

Dawne Steele Pullman volunteered her services for a conservation survey at the Sitka Historical Society and Museum last year after the WAAC meeting in Juneau, Alaska. This year they found funding, and she returned to work on their treasured painting of the *USS Jamestown* by R.P. Smith done in 1879. The painting's historical impact and the news of its conservation generated much interest in the town, as well as statewide, both with radio and newspaper interviews thereby encouraging support of conservation and cultural heritage preservation

Thor Minnick began treatment for an ornate gilt revival picture frame for *The Royal Cordon of King Liloa of Hawaii* by E. Smith Corwine (1890) belonging to the Bishop Museum and recently completed treatment of assorted King Kalakaua kou-wood umeke and F. N. Otremba ulu plaque from a private collector.

Regional Reporter:
Dawne Steele Pullman

NEW MEXICO

Conservation Solutions, Inc. (CSI) has continued to stay busy this spring and summer. They are currently concluding the first phase of work on sculptures and fountains for the Vizcaya Museum and Gardens located in Miami, FL. In addition to this major collection in Miami, they are also in the process of completing the conservation of a variety of sculptures, flagpole bases, and a fountain located on the campus of the University of Virginia in Charlottesville, VA. Other recent projects of note include an assessment of *Solar III*, an abstract concrete sculpture by Edgar Britton in Littleton, Colorado; the conservation of a copper repoussé *Lady Justice* sculpture from the Augusta municipal building in Augusta, GA; and the assessment of a zinc *Lady Justice* sculpture located in El Paso, TX.

Bettina Raphael continues to be involved in the preservation project at the Gustave Baumann House in Santa Fe, New Mexico. In addition to cleaning the faux-painted walls and work ing to fill and in-paint cracks in these walls, Bettina, along with **Holly Strachan**, an intern from the Historic Santa Fe Foundation, have focused increasingly on tracking and documenting the various colors and types of paint used by Baumann on the interior and exterior of the house over his 50 year residence.

Small Museum Pro!, a professional certification program for those who work in small museums, has completed its first year. There are three certified Small Museum Pros from the pilot program, and there have been about sixty students from eight states who have participated in one or more of the five classes in the program. This program is part of the offerings of Museum Development Associates whose executive director is **M. Susan Barger**.

During the month of August, **Steven Prins** conducted a conservation survey of part of the paintings collection at the New Mexico History Museum in downtown Santa Fe.

Regional Reporter:
M. Susan Barger, PhD

PACIFIC NORTHWEST

Marie Laibinis-Craft has just begun work on *Leland #1*, a 1970s Cor-Ten steel and porcelain enamel outdoor sculpture by Pacific Northwest sculptors Lee Kelly and his late wife, Bonnie Bronson. Marie is focusing on cleaning and stabilizing the enamelled panels and is working with fabricator Jim Schmidt of Art & Design Works for the structural repairs. The project is being performed for the Regional Arts & Culture Council who received an NEA grant for the conservation work.

Morgan Hayes, who has been interning with Marie and other Portland conservators, was accepted into the conservation program at the University of Delaware and is now on her way to Delaware. Good luck Morgan, we will miss you. **Jacinta Johnson** is also interning with Marie and has been working on studio projects and assisting with maintenance of outdoor sculpture at the Portland Art Museum.

Seattle Art Museum conservation department is very pleased to announce that, thanks to continued support from the museum's volunteer and docent organizations, **Linda Lin** will stay at the museum for another year as a conservation fellow. Linda recently completed her third year internship at SAM, graduating this summer from the UCLA/Getty conservation program. The department is similarly honoured to be the recipient of a Fine Art Restoration Foundation grant that will allow **Katie Patton** to join the SAM conservation team this October as a fellow, working with Nicholas Dorman on the Veronese workshop painting *Venus and Adonis*.

Nick recently returned from an AIC-CERT deployment to Haiti to work on paintings at the Cultural Recovery Center. At the Asian Art Museum, Nick and **Marta Pinto Llorca** recently brought home an exhibition of 100 works of art from the SAM collections that have spent the past year touring museums in Japan. The museum also welcomed Kewei Wang of the University of Michigan Museum back to Seattle to complete her condition survey of the Chinese paintings. Her data will form part of a Getty Foundation-funded on-line catalog of the collection. The museum was also awarded IMLS funding for a new suite of custom storage cabinets for their Asian screen collection, and this project is currently well underway.

Earlier this summer, following treatment by **Liz Brown** and consultant **Ken Bortolazzo**, a sculpture by George Rickey was added to the Olympic sculpture park. With the arrival of the customary month or two of warm sunny weather, SAM conservation performed their summer Olympic sculpture park maintenance program of cleaning and coating the sculptures.

Claire Gerhart performed treatment on a George Morrison painting, *Untitled,* 1955 which was featured in an exhibition of the artist at SAM this spring and summer. The work suffered from a disfiguring migration of fatty acids to its surface that caused interlayer cleavage and losses throughout. Morrison (d.2000), a Native American painter, was active in the mid-century art scene in New York.

Lisa Duncan moved to Eugene, Oregon and started a private practice in works on paper and photographic materials.

Tiffany Hedrick of the Seattle Office of Arts & Cultural Affairs, and **Corine Landrieu** of Landrieu Conservation, recently performed the treatment of the Farmer Pole and the Native Pole located at Victor Steinbruck Park in Seattle, next to Pike Place Market. They collaborated on the re-painting of the poles with James Bender, who had originally carved them.

Regional Reporter:
Corine Landrieu

ROCKY MOUNTAIN REGION

Carl Patterson Director of Conservation, Emeritus, has been busy doing consulting work for the Denver Firefighters Museum and the Denver Art Museum. The results of the Gabo Foundation-funded trip to India to study current lost-wax casting in the States of Orissa and Chhattisgarh have resulted in several lectures, a proposed publication, and an upcoming educational program in the galleries for the Denver Art Museum. He continues to advocate for museum conservation through the board of the Colorado-Wyoming Association of Museums, the board of DUArt!, the board of the Denver Firefighters Museum, and the board for Alianza which raises funds for collections acquisitions and conservation for the New World dept. at the Denver Art Museum.

Gwenanne Edwards, Buffalo State Art Conservation Program, spent the summer as advanced conservation intern at the Buffalo Bill Historical Center. She is funded by a grant from the Tucker Foundation. **Evan Knight**, from the Conservation Program at the University of Texas at Austin is also spending the summer as advanced conservation intern at the Buffalo Bill Historical Center. Gwenanne and Evan are working on numerous paper and book projects and even a chandelier made out of rawhide.

Jessica Cosmas from Bryn Mawr, **Kallie Holt** from the U. of Iowa, and **Kathryn McKenzie** from U. of Toronto (MA) are in residence as pre-program interns this summer at the Buffalo Bill Historical Center. They are working on the maintenance of the outdoor sculpture, drawings on tracing paper, ceramics, baskets, and composite objects.

Beverly Perkins is working on a project funded by the Bay and Paul Foundation with **Ralph Wiegandt** and **Rachel Freeman**. This project will investigate the paper collections at the Buffalo Bill Historical Center and help to formulate a plan for a paper conservation lab. Beverly is also working with **Brynn Bender** and will be in residence for a week at the NPS site Grant-Kohrs Ranch in Montana. Beverly and her husband Randy took BBHC Molesworth furniture to the Antiques Roadshow in Billings, Montana. The rustic, western-themed Molesworth furniture will be featured in an appraisal segment.

Beverly was deployed to Port au Prince as an AIC-CERT conservator from the Buffalo Bill Historical Center. Beverly was on one of many teams including: Project Conservator **Stephanie Hornbeck**, **Karen Pavelka**, **David Goist**, Rosa Lowinger, and **Viviana Domingues**.

Mark Minor has very nearly finished up a long, involved treatment of an 18-th C. Boulle marquetry Bureau Mazarin at the Denver Art Museum. He is also working on a nice backlog of his favorite work-- musical instruments, including a very complex rebuilding of a smashed pre-war Martin guitar and a couple of challenging violin repairs.

Regional Reporter:
Paulette Reading

SAN FRANCISCO BAY AREA

As part of FAIC's program for professional development, a new pilot workshop on the conservation of outdoor sculpture was held July 27-30, 2010 in San Francisco. The workshop was funded in part by a grant from NEH. Additional funding came from the FAIC Endowment for Professional Development, which is supported by the Andrew W. Mellon Foundation and by contributions from members and friends of AIC.

Additional funds were contributed by Talas, Inc. in support of the outdoor scultpure tour. Several vendors contributed free samples and product literature: Cathdral Stone, Prosoco, Tnemec, Keim, and Sherwin Williams. Fox Marble (San Francisco), Western Waterproofing (San Leandro), and t he Presidio Trust contributed sample materials; and Architectural Resources Group (San Francisco) contributed printing and other classroom supplies.

Workshop partners were ARG Conservation Services, the San Francisco Arts Commission, and San Francisco Recreation and Parks Department.

The course curriculum was developed by **Katharine Untch** who led the workshop. Presenters included **Tom Learner** and **Rachel Rivenc** of the GCI, **Andrew Lins** of the Philadelphia Mus. of Art, **Tami Lasseter Clare** at Portland State U., **Wendy Amos** of Tnemec, **Michelle Barger** at SFMOMA, **Elisabeth Cornu** at the deYoung Museum, **David Wessel** at ARG, **Stephen Patton** of the Nob Hill Association, **Susan Pontious, Allison Cummings** and **Carol Marie Daniels** of the Arts Commission. **Kelly Wong** and **Mary Slater** organized two of the lab sessions. **Luis Cancel**, Director of Cultural Affairs for the City of San Francisco, provided opening remarks for the course participants.

Additional volunteer assistance was received by **Orion Lakota** who coordinated all the course supplies and provided masonry repair demonstrations, **Teresa Duff** who conducted the literature search with the guidance of **Cameron Trowbridge** and **Valerie Greathouse** at the GCI, **Jocelyn Chan** who prepared the workshop binders, and **Haley Stevens** who assisted with logistics during the course. Portions of the course were also reviewed by **John Griswold, Tracy Powers,** Rosa Lowenger**, Dave Harvey,** and **Julie Wolfe** who lent helpful comments during the course development phase.

Workshop Participants were **Alisa Eagleston, Therese Carbonneau, Jonathan Fsher, David Gallagher, Rowan Geiger, Fiona Graham,** Orion Lakota**, Lauren Isaacs, Kate Ottavion, Steven Pickman, Tracy Satin,** and **Mary Slater**.

ARG Conservation Services (ARG/CS) recently completed treatment of the historic paint on the proscenium at the Bay View Opera House in San Francisco. This work involved repairing cracked and detached plaster, replacing woodwork, stabilizing, cleaning, and inpainting the stenciled decorations. Team members were Katharine Untch, project manager; **Mark McMillan**, architectural conservator; **Johana Kranz-Moreno**, objects conservator; **Megan Berkey**, paintings conservation intern; Haley Stevens, intern; and Jocelyn Chan, intern.

Johana Kranz-Moreno and Haley Stevens assisted in removing graffiti from the Buddha at Civic Center and the Korean Monument in San Francisco. ARG Conservation Services is currently investigating, testing, and preparing recommendations for the restoration of the exteriors of Calvary Presbyterian Church in San Francisco. Work includes a full stone-by-stone survey of a selected sample façade of the Colusa sandstone-clad building. Samples were taken and sent to Lorraine Schnabel for petrographic analysis. Restoration of the church will include removal of paint coatings, repair of failing sandstone cladding, repainting, and conservation of the stained glass windows. The project team is led by David Wessel, principal and architectural conservator, with **Rick Flaster**, construction manager, **Ted Dunn**, historic preservation specialist, and Mark McMillan, architectural conservator.

Katharine Untch is leading ARG Conservation Services efforts at the Weaverville Joss House State Historic Park to translate the Chinese inscriptions and provide conservation treatment of the historic paper affixed to the walls. ARG/CS is teaming with paper conservator **Kathleen Orlenko** and translators **Charles Egan** of San Francisco State U.and **Wan Liu**, formerly of Stanford University.

ARG Conservation Services recently completed several cemetery projects as part of the national effort to improve cemeteries under the recent economic stimulus plan. Katharine Untch has led projects at the Los Angeles National Cemetery and the San Francisco Veterans Cemetery in the Presidio where **Dave Harvey,** objects conservator, provided on site supervision and conservation treatment of the Pacific Coast Garrison Monument.

In May 2010, Mark McMillan joined ARG. Mark has been working with the Conservation Services division on the Mills Building, Calvary Church and Bayview Opera House.

Meg Geiss-Mooney, textile/costume conservator in private practice, participated in the 2010 AIC Angels Project that took place in Milwaukee in May. She began her second term as the Treasurer of the AIC-Textiles Specialty Group in May as well. She also volunteered at her local Girl Scout camp, her 15th year, in July and came away extremely hopeful for the future.

After more than 30 years of dedicated service to the Fine Arts Museums of San Francisco, **Elisabeth Cornu** has announced her retirement, effective July 16, 2010. Elisabeth essentially founded Objects Conservation at the de Young and performed expert treatment on countless numbers of needy artworks in addition to establishing programs that prevent damage. Her leadership and expertise is recognized internationally. Those who worked with her at the deYoung and Legion of Honor will miss her boundless energy and optimism. We wish her all the best for her future.

Regional Reporter:
Beth Szuhay

TEXAS

On July 7th, **Mark van Gelder** presented a Noon Gallery Talk at the Bob Bullock Texas State History Museum in Austin, as part of the public programs related to an exhibit on the Texas Governor's Mansion and its current renovation. Mark is also doing some conservation work on a mural by Peter Hurd and Peter Rogers in the lobby of the Lorenzo de Zavala State Archives and Library building. On July 21, the mural conservation project was covered by Austin's Fox 7 evening news and featured in the Metro and State section of the Austin American Statesman.

Regional Reporter:
Ken Grant

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perils of fame

It's impossible not to end up being a parody of what you thought you were.

Keith Richards

(fortunately, not usually a problem in conservation)

Technical Exchange

Don't Look Into My Eyes

The workhorse Optivisor has earned a place high in the toolbag of most every myopic conservator. Still, as a fashion statement, the Optivisor positions itself somewhere between surgical headgear and sunglasses for the blind.

But now the old specs get some new specs: mounting on the Quasar LS Lighting System transforms the Optivisor's standard view into a vision of really remarkable clarity and depth. With no obstruction to the visual field, the LS's bank of six high-intensity LEDs pours oodles of shadowless, penetrating illumination into the deepest holes and crevices. Indeed, the lamp is intense enough for habitual wearers to adopt a downcast gaze and cringing demeanor around colleagues to avoid blinding them with a quick, ingratiating glance to the eyes.

The "System" consists of a lightweight plastic frame which snaps over the Optivisor's existing lens plate, connected to a battery pack. And here is the only fly in an otherwise perfect ointment. When loaded with batteries, the pack weighs just under 3 ounces - enough to become annoying when side-mounted, as the instructions recommend. We found the system worked best with the battery pack attached to the center of the Optivisor's "brim" with a strip of Velcro. Gaffers tape secured the loose wires.

With the Quasar System, you'll pull out your drab old Optivisor with new purpose and pride. The light rack is rugged, easy to use, and the claim of up to 96 hours of use from its pair of AA batteries seems credible. The LS Lighting System installs with a pair of plastic clips, works with acrylic or glass lenses, and the LEDs have a life expectancy of 100,000 hours. The price is $21.95, plus shipping at www.loupe-magnifier.com/quasar_is_lighting_system.htm.

In politics, it's been said that light is the best disinfectant. In conservation, this souped-up Optivisor will reveal, in plain sight, just where to place the Biocide.

Paul Gordon

How the PVOH Sponge Got its Stick

Once upon a time, in a studio not so far away, O my Best Beloved, there was a cotton swab, and it left fibers behind wherever it rolled. It left linters, and snagged impasto, at least some of the time, and was well loved, but not perfect.

During the course of the treatment of a large contemporary painting at the Getty Conservation Institute, a better way to apply and remove an aqueous cleaning solution evolved. This may not be new to everyone, but it was new to us, and it proved to be very handy.

GCI summer intern Jennifer Hickey (NYU) and I were cleaning Doug Wheeler's *Untitled*, 1964. It was painted with Liquitex acrylic ground and paints, and had never been treated. For these two reasons, it was an interesting case study for the GCI's Cleaning Acrylic Painted Surfaces (CAPS) project, and the treatment was undertaken in Tom Learner's lab at GCI.

After determining the best aqueous cleaning solution we had begun cleaning the large (7'4" x 6'10") painting by rolling and rinsing with large cotton swabs. The surface of the painting has a very rough surface as the acrylic ground was applied by spray. The rough surface held lots of cotton fibers. In addition to being annoying, removing the fibers caused some loss of the textured surface – we could find tiny dots of acrylic ground accumulating on the ground and easel below the painting.

Tiarna Doherty, JPGM paintings conservator, had been experimenting with various sponges on acrylic paintings, but this surface was too rough to wipe with a sponge.

The first solution, was to carve a PVOH (poly(vinyl) alcohol) sponge into two large and very roughly shaped cylinders. One sponge was used to apply the cleaning solution and the other was used to apply the clearing solution. Each sponge was dampened, and then first the cleaning solutions and then the rinse was rolled onto the surface of the painting with a gloved hand.

Each sponge was wrung out into a container before rewetting in fresh cleaning or rinse solution.

Getty dec. arts conservator Arlen Heginbotham dropped by the lab, looked at our wonky, hand-carved sponges and had a better idea. He made a core-drill out of a piece of scrap copper tubing. He used a drill press to make us two perfect cylindrical sponges out of a well dried-out PVOH sponge. (The sponge which is purchased wetted and sealed in a plastic bag needs to be rinsed out and allowed to

dry completely so it becomes very hard all the way through before the drill can be used.)

Private conservator Carolyn Tallent visited the lab to see the treatment and suggested that we put Arlen's sponges on swab sticks. Thin swab sticks didn't work well – the wood got waterlogged quickly and flexed too much, but thick bamboo swab sticks worked very nicely.

Carolyn figured that someone must make cylindrical PVOH sponges and did some checking on the Internet. She found a company in Indiana that manufactures them in a many variations, including 2" long 1/2" diameter tubes. (Most of the companies selling PVOH materials seem to be based in China or Korea.)

Unfortunately, they are not cheap. If one buys a bag of 100, they are $.90 each, with price breaks for more.

Qty. 100 - $ .90 each
500 - $ .74 each
1000 - $. 60 each
5000 - $. 48 each

It would obviously be great if a conservation supplier could repackage these for us. Since they can be re-used, one wouldn't need a huge stock of them.

PVA Unlimited
PO Box 1552, Warsaw, IN 46581
Bob South
voice (574) 269-2782
fax (574) 269-2756
bobsouth@comcast.net
www.sponge-pva.com

And, that is how, my Best Beloved, the cotton swab became the PVOH sponge swab. [With apologies to Rudyard Kipling.]

Chris Stavroudis

It's a Lab Tool *and* a Fashion Statement.

Dapaway® Disposable Dappen Dishes are made for dentists and dental hygienists as a convenient way to have fill materials and tooth polish at hand, as it were. The cups are made of polyester, which should tolerate the materials we use for fills.

I got my samples from my hygientist; you can order them through local dental suppliers, or probably your dentist can get them. (Another case where it would be convient for a conservation supplier to stock them.) A box of approximately 1000 cups with one holder is about $25. Ordering a holder alone is $10. (!)

One useful aspect: it's very easy to place your thumb over the top to keep the fill material from drying out.

Carolyn Tallent

WAAC Publications

Handling Guide for Anthropology Collections

Straightforward text is paired with humorous illustrations in 41 pages of "do's and don'ts" of collection handling. A Guide to Handling Anthropological Museum Collections was written by Arizona State Museum conservator Nancy Odegaard and illustrated by conservation technician Grace Katterman. This manual was designed to be used by researchers, docents, volunteers, visitors, students, staff or others who have not received formal training in the handling of museum artifacts. Paperbound and printed on acid-free stock.

Price: $8.85
($6.60 copy for orders >10 copies)

Back Issues of WAAC Newsletter

Back numbers of the *Newsletter* are available. Issues Vol.1 - Vol.14, #3 (Sept. 1992) are $5/copy. Issues Vol.15 - Vol.29, #3 (Sept. 1997) are $10/copy. Issues Vol.30 (Jan. 2008) and after are $15/copy. A 20% discount will be given to libraries seeking to obtain back issues to complete a "run" and for purchases of ten copies or more of an issue.

Prices include shipping and handling. Make checks payable to WAAC drawn in US dollars on a US bank.

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Donna Williams

Pemulen

For the past few years, a small number of conservators have been following Richard Wolbers' lead and experimenting with Pemulen, a poly acrylic acid similar to Carbopol. Pemulen holds the promise of resolving many cleaning issues in conservation. Pemulen based emulsion systems can solve vexing problems that require both aqueous and solvent components simultaneously. They can sometimes replace simple solvent cleaning systems, reducing the amount of solvent needed dramatically and minimizing the conservator's exposure to hazardous fumes.

As yet, while we have a fundamental understanding of how it works, how it can be used in conservation, remains a bit elusive. One problem is that there are so many options for building a cleaning system (pH, inclusion of chelating agents, inclusion of surfactants, amount and choice of solvent to emulsify) it's difficult to feel one has a sense of how it will work on a given problem.

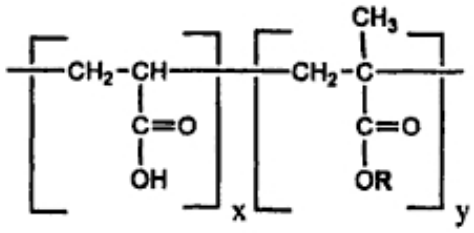
This collection of short articles and case studies is intended as an introduction. First, a short description of its chemical structure and behavior, followed by case studies which describe its use as a part of treatment, and last a primer on integrating Pemulen into the MCP, with a batch of recipes.

Pemulen, like the Carbopols, is made by Lubrizol (formerly Noveon). Small amounts can be purchased from "The Personal Formulator" <http://www.personalformulator.com/wvss/>. There are two grades, Pemulen TR-1 which holds up to 20% "oil" in an emulsion, and Pemulen TR-2 which holds up to 50%. Because of the versatility of the greater emulsification power, everyone in conservation has been experimenting with the Pemulen TR-2.

Pemulen® TR-2: An Emulsifying Agent with Promise

by Nancie Ravenel

Pemulen® TR-2 is a polymeric emulsifier introduced in the late 1980s by B.F. Goodrich and now produced by Noveon, a subsidiary of Lubrizol. In the cosmetic industry literature, Pemulen TR-2 is part of a class of copolymers referred to as acrylate/C10-30 alkyl acrylate cross polymers (Goddard 1999) .



R = long chain alkyl group

It consists of a poly acrylic acid similar to the Carbopol® resins, cross-linked with a long-chained methacrylate. Thus, this polymer has lipohipllic regions (the methacrylate) as well as hydrophillic regions (the acrylic acid).

These regions of differing affinity allow Pemulen TR-2 to act as a primary emulsifier, that is, it can be used to make oil in water (O/W) emulsions without the addition of soap or surfactant.

Pemulen TR-2 does not form emulsions in the same way that traditional surfactants do. To produce an oil in water emulsion, a traditional surfactant surrounds a droplet of oil to keep it suspended in oil. Nonionic surfactants used for cleaning painted surfaces might be used in concentrations as high as 30% to form a macroemulsion (Wolbers 2000).

In contrast, Pemulen TR-2 can form stable O/W emulsions in as small a concentration as 0.4% (Noveon 1999), binding to the oil droplets with the lipophilic portions of the polymer chain that forms the gel. Therefore, emulsions can be built with far less surfactant than with more traditionally used materials. For instance, emulsions created in the conservation lab at Shelburne Museum contain Pemulen TR-2 in a 1% concentration in the gel.

Gels made with Pemulen TR-2 are most viscous in the pH range of 5-9. A range of alkaline materials are suggested by the manufacturer to formulate aqueous gels using Pemulen TR-2, including sodium hydroxide, ammonium hydroxide, triethanolamine (TEA), and Ethomeen C-25 (Noveon 2009).

One interesting feature of Pemulen is that this emulsifying agent is designed to break when the gel is in contact with a salt concentration similar to what one would find on human skin (Lubrizol 2008). This characteristic is desirable in the cosmetics industry where moisturizers need to be quickly delivered and absorbed into the user's skin, but less desirable in an emulsion designed to clean works of art. In practice, this breakage of the emulsion has been observed when attempting to clean very grimy areas and when the gel is left to dwell for an extended period.

Since the structure of Pemulen is described as being similar to that of Carbopol, it is assumed that clearance issues for Pemulen TR-2 would be similar to Carbopol. Thus, one could look to the solvent gel research undertaken at the Getty Conservation Institute(Dorge 2004) to be indicative of issues one might encounter when trying to clear an emulsion containing Pemulen TR-2. For the Carbopol gelling agents, clearance largely is related to porosity ofthe substrate being cleaned (Khandekar 2004).

Case Study 1. Dentzel carousel panels

Richard Wolbers introduced Pemulen TR-2 to the conservators at Shelburne Museum in his capacity of consultant to a 2007 IMLS-funded project to clean paintings on canvas from the museum's 1902 Dentzel carousel.

Eleven large paintings, measuring 8 ft. x 4 ft., surround the carousel's working mechanism. These panels had been unevenly coated with what is assumed to be a spar varnish which had yellowed with age. As well, machine oil had splattered the reverse side of the canvas and migrated through fissures in the paint and varnish to the top surface. Machine oil was also noted on the front of some of the panels, most likely from an engine which drove the carousel's organ.

Despite being more than 50 years old, the splattered oil had not completely cross-linked and continued to migrate into materials surrounding the panels in storage. Additionally, drips of lubricating oil from the overhead beams also marked the paintings. These oily drips had shrunken, hardened, and were pulling the underlying paint from the canvas.

Sixteen smaller paintings, measuring 6 ft. x 4 ft.,were located just under the radiating arms at the top of the carousel. They were coated with the same tough yellowed varnish. While these canvases were not stained with machine oil, occasional black drips of the lubricating oil were found on these panels.

Over the two day consultancy, Richard tested a number of cleaning methods, including free solvents, solvent mixtures, and Carbopol-thickened solvent gels. He also tried emulsions of benzyl alcohol in a gel made with Pemulen TR-2, triethanolamine (TEA), and deionized water. Emulsions were applied and agitated on the surface with a brush. The emulsion was wiped from the surface with a dry cotton swab, and the surface was rinsed with deionized water on a cotton swab.

Initial solvent tests on the varnish indicated that the it was slowly soluble in acetone. After a more complete battery of cleaning tests, the most effective systems to remove the yellowed varnish tested were:

- benzyl alcohol gelled with Carbopol,
  followed by a rinse of 1:1 petroleum benzine and isopropanol;
- 20% benzyl alcohol in deionized water gelled with Pemulen TR-2 adjusted to a pH between 7 and 7.5 with TEA,
  followed by a rinse with deionized water.

The splattered oil could be readily picked up from the surface using xylene on cotton swabs, less so using petroleum distillates on cotton swabs. We found that the 20% benzyl alcohol / Pemulen TR-2 gel adjusted to a pH of 7.5-8 was effective at removing both the black machine oil and the yellowed varnish.

As testing progressed, this emulsion proved to be too aggressive over the red and green colored paints. Richard suggested replacing the TEA with a 1:1 combination of TEA and a 2% solution of Tris(hydroxymethyl)aminomethane (TRIS) to create a less aggressive gel. At a pH of 7.5 this gel was effective at removing the discolored varnish and the machine oil, but did not disurb the paint.

In fact, an emulsion prepared with TRIS but no TEA was ineffective at removing either the oil or the varnish.

A further refinement of the process was suggested by paintings conservator Chris Stravroudis (2009). Rather than mixing a single Pemulen gel using a mixture of TEA and TRIS, Chris suggested making two gels at the same pH, one mixed with TEA, the other mixed with TRIS at the same pH. The two gels could be mixed by volume to easily build gels and emulsions containing a range of TEA concentration.

We chose to continue to use the Pemulen emulsions because in using them, we were using less organic solvent to clean the panels.

One of the panels before treatment. After treatment.

Gustav Dentzel Company, carousel panel depicting a woman walking a dog, 1902. Oil on canvas. Collection of Shelburne Museum, FC-7.62.

Case Study 2. A miniature train engine

Admittedly, even though I find emulsions made using Pemulen TR2 to be quite useful for removing linseed oil coatings from painted surfaces, they aren't necessarily the first thing I reach for when considering cleaning options. I continue to test more traditional aqueous and solvent cleaning agents before trying gelled or emulsified solutions.

Towards the end of the IMLS carousel panel project, I was asked to remove a dirty wax coating from the painted wood surfaces of a folk art miniature train engine. The horizontal surfaces of the train were matte and grey with dirt, the vertical surfaces were black and glossy.

Before treatment, Francis Herbert Chapman, Model Train Engine, c. 1875. Painted wood, painted metal. Collection of Shelburne Museum, 1977-45.

A solution of 2% triammonium citrate in deionized water only beaded up on the waxy surface. Mineral spirits seemed somewhat effective, removing dirt but leaving behind a matte grey residue. More grime could be removed by alternating applications of mineral spirits with triammonium citrate, but the surfaces still appeared matte after cleaning. My next step typically would be to make an emulsion using a non-ionic surfactant such as Triton XL-80N. Instead I tried a Pemulen TR-2 emulsion made with mineral spirits.

The emulsion consisted of 1 g. Pemulen TR-2, 100 mL deionized water, 7.5 mL 2% TRIS, and 2.5 mL TEA, shaken with 10 mL mineral spirits. The emulsion was applied, agitated with a brush for about 10 seconds, removed with a dry cotton swab, and area rinsed with deionized water. The emulsion removed the dirt, and the area that was tested appeared as glossy as the engine's vertical surfaces after rinsing.

Cleaning tests on the engine's roof.

Conclusions

Although we've been working with Pemulen TR-2 aqueous gels and emulsions for a few years now at Shelburne Museum, questions remain in my mind about how it works. TEA plays multiple roles within the gel and emulsion: it neutralizes the acrylic acid/acrylate copolymer, it buffers the solution, and it also is active in the cleaning action. In projects where we have tested Pemulen TR-2 emulsions, it seems that the concentration of TEA in the solution plays a greater role in the amount of solvent added to the emulsion, but I have yet to explore this systematically.

Summer interns working at Shelburne Museum to remove linseed oil applied to carousel animals more than 50 years ago have successfully used aqueous gels mixed with Pemulen TR-2 and TEA where aqueous gels mixed with Carbopol, TEA, and citric acid were not as effective. Product literature from the manufacturers indicates that Pemulen is able to emulsify linseed oil and tung oil. Is Pemulen's ability to emulsify oil playing a role in this cleaning process?

As our interns and I continue to explore this emulsifying agent with promise, I am recording our methods and observations in a wiki, http://pemulentr2.pbwiki.com. Please consider yourselves invited to comment or share your own experiences using Pemulen TR-2.

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Pemulen Case Study: Holy Innocents Mural Project

by Kirsten Travers, Richard Wolbers, and Carolyn Tomkiewicz

Figure 1.
Ave Maria Mural at Holy Innocents Church, before treatment.

Pemulen TR-2 was an integral part of a three-step cleaning process designed for Taber Sears's *Ave Maria* mural (c.1923), adorning the left wall of the transept of Holy Innocents Roman Catholic Church in Brooklyn, New York. The painting measures 11' x 10' and is adhered to the masonry wall with what appears to be a lead white adhesive. Although the mural was in good structural condition, the image was obscured by a thick layer of soot, presumably from a 1977 fire in the church that was trapped beneath a thick layer of alkyd varnish that left the surface almost completely black (fig.1).

Under the direction of Richard Wolbers, associate professor and adjunct paintings conservator (WUDPAC) and Carolyn Tomkiewicz, paintings conservator (Brooklyn Museum of Art), examination, analysis, and treatment of the mural was carried out in stages from January 2009 to May 2010 by graduate students and PhD fellows at the Winterthur/University of Delaware Program in Art Conservation (WUDPAC). Kirsten Travers was the lead conservation fellow for whom the mural served as an analysis/treatment project for her second year Painted Surfaces curriculum.

Analysis revealed that the original painted surfaces consist of an 'emulsion' paint made with oil containing dispersed phases of protein and carbohydrate moieties. This suggested that water sensitive/soluble material was potentially present. The original paint layers were coated with a thin layer of natural resin varnish, which may have been applied by the artist. A distinct layer of soot was deposited over the surface of the varnish, probably the accumulation of incense and candle smoke as well as soot from the 1977 fire. This was followed by a very thick alkyd resin coating (identified by GC-MS analysis, L. Kubick 2009). It is not known when the alkyd resin was applied, but the intention may have been to re-saturate the soiled mural following the fire. Large areas of the painting were apparently abraded during this campaign of restoration; scattered retouchings were found directly underneath this alkyd coating, which "trapped" the underlying retouching/soiling materials. Over time, the alkyd coating discolored and an additional accumulation of soiling materials were subsequently deposited on its surface, effectively creating a soot-alkyd-soot "packet" that obscured the bulk of the presentation surface of the mural (fig. 2).

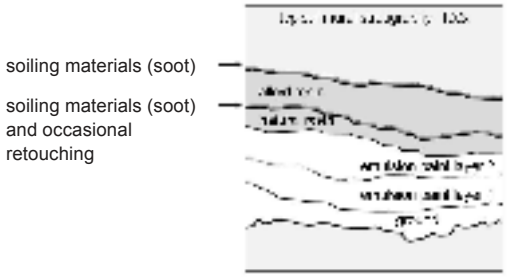

Figure 2. Illustration of the typical mural stratigraphy.

A variety of approaches were tested. Taking into account the moisture-sensitivity of the original paints, we decided to "unpack" the trapped soiling/retouching layers and discolored resins in stages primarily using solvent gels and secondarily using aqueous systems. With their high viscosity and ability to work exclusively on the surface gels provided optimal control while keeping solvent fumes to a minimum, a benefit for the conservators, the mural, and the congregation, as the church was in use during this time. After extensive testing, we found that a 3-step method consisting of (1) solvent gel, (2) Pemulen, and (3) solvent gel was extremely effective. Large areas (approximately 1' x 1') could be cleaned evenly and without tide lines, and in a manner rapid enough to accomplish a great deal of work in one day. After the initial removal of the uppermost soiling materials with Shelsolv D-38 on cotton pads, the cleaning was accomplished in the following manner:

Step 1: To remove the bulk of the alkyd resin, a 2:1 benzyl alcohol/acetone solution was gelled with Carbopol 954/ Ethomeen C-12. This was brushed onto the surface and allowed to dwell for approximately 20 minutes, or until a distinct "crinkle" pattern was observed on the surface. The alkyd was then agitated with a short, stiff bristle brush, stirring up copious amounts of swollen, discolored resin along with overpaint and some of the trapped soot, which we wiped from the surface with cotton pads and rinsed with Shelsolv D-38. Although most of the alkyd was removed, a dark veil of tacky, swollen residues remained (fig. 3).

Figure 3. During treatment detail. The alkyd resin has been removed from the angel's head and neck, but residues remain. [The gilt halo was cleaned using a separate system, not described here.]

Pemulen Case Study: Holy Innocents Mural Project, continued

Step 2: Pemulen TR-2 gel (1% polymer in deionized water, neutralized with triethanolamine) at a pH of 8. was used to remove the tenacious alkyd residues and the underlying soot. A thin layer of this gel was brushed onto the surface, gently agitated, and wiped dry with a clean cotton pad. As an emulsion-forming polymer, Pemulen can bring together both aqueous and solvent phases in a stable arrangement without the use of surfactants. It is this emulsion-forming property that was effective at this stage to pick up the residual alkyd coating left behind after the initial gel cleaning step, as well as the substantial soot layer beneath it. As a gelled system with a brief contact time, all of the "action" occurred at the surface of the soot/alkyd intermix layer, while the moisture was held back from the paint and the natural resin below. By controlling the pH in this preparation, the swelling and dissolution of the natural resin layer was limited, and it served, at least for the moment, as a stopping point so that the emulsion would not quickly reach the moisture-sensitive paint beneath.

Step 3: The 2:1 benzyl alcohol/acetone gel used in Step 1 was re-applied to remove the remaining earlier natural resin varnish. A very thin layer was brushed on the surface and immediately agitated and rinsed away with Shelsolv D-38 on cotton pads. Rinsing continued in this fashion until no visible residues remained. The results were immediate: removal of the final discolored resinous film exposed the original painted surface and revealed Sears' rich color palette and composition for the first time in decades (fig. 4).

Figure 4. After treatment detail. Steps 1 - 3 have been carried out, removing all of the alkyd resin, natural resin, and soiling material from the painted surface.

Pemulen Case Study:

A Midsummer-Night's Dream is a set of nine bas-relief sculptures by British-born American sculptor John Gregory (1879-1958). Eight of the nine plaster maquettes are in the collection of Scripps College while the ninth panel is located at Amherst College. The Scripps reliefs are the models for the marble versions located on the facade of the Folger Shakespeare Library in Washington, DC. Preliminary research has identified the Piccirilli brothers as the stone carvers of the marble renderings at the Folger.

Figure 1. Before Treatment.

This treatment underscores the importance of thorough examination and analysis to characterize both original and non-original materials in a paint surface. It was only through this process that the complex layering sequence of emulsion paints, natural resins, overpaints, and alkyd resins intermixed with soot and soiling materials could be understood, and an appropriate cleaning system designed to "un-pack" the layers by targeting the particular properties of each for step-wise removal.

The emulsion-forming properties of Pemulen allowed us to carry out a cleaning by effectively emulsifying the residu es of intermixed polar/non-polar materials (swollen alkyd resin/soot) left on the surface of the discolored natural resin varnish. Had it not been for the extended dwell time required to swell the alkyd coupled with the water-sensitivity of the original paints, it might have been possible to use Pemulen TR-2 exclusively as a vehicle for bringing the benzyl alcohol/acetone to the surface to swell and remove the alkyd resins and soiling materials simultaneously. Nevertheless, it is important to note that the ability of Pemulen to emulsify solvents in an aqueous system is an important step in the advancement of less-toxic approaches to the cleaning of painted surfaces.

A Midsummer-Night's Dream

by Donna Williams

In 2007, Scripts College undertook the conservation of their plaster reliefs. The reliefs are installed in a covered exterior arcade on the walls of Balch Hall at the Claremont, CA campus. All of the reliefs have been painted with two layers of gray colored wall paint -- the same paint applied to the surrounding wall surfaces. In general, the paint is well adhered to the plaster with localized areas of powdering, lifting, cracking, and flaking.

College archive documentation is limited but does show the reliefs without overpaint shortly after their installation in 1968. Records suggest overpainting first occurred sometime in the early 1980s. Conservation intervention was undertaken to remove the non-historic paint to reveal the original surface and to more fully understand how the reliefs were fabricated, and their relationship to the marble artwork at the Folger.

Analysis by Richard Wolbers and David Scott to identify overpaint binders and pigments, and plaster composition, revealed that the overpaint layers are emulsion paint, a combination of an oil protein mixture, e.g. linseed oil, casein. The plaster is gypsum with a wide particle size distribution.

Figure 2. During Treatment.

Overpaint removal was initially performed by application of benzyl alcohol applied by brush to randomly selected locations. Application of benzyl alcohol was repeated until the paint appeared saturated and showed signs of cracking or lifting from the substrate. Several applications were required in approximately 25% of the test areas before swelling and lifting of the paint was visible. Repeated applications of benzyl alcohol to the remaining test areas over a period of several hours resulted in uneven paint removal and left the plaster saturated and slightly softened. Ultimately, this treatment was not satisfactory as it was found to be ineffective in areas where the paint was well adhered and slightly cross-linked to the plaster substrate.

The removal of the overpaint revealed small deliberately applied pencil marks. In some areas the marks are a small dot and in other areas the dot is surrounding by a small circle. In addition, small "X" marks are also visible. These marks appear to be location marks applied by the sculptors during the "pointing" process of translating the sculpture from plaster to marble.

The not entirely successful preliminary cleanings test suggested that a more controlled application of benzyl alcohol to the overpaint was necessary. Isolating the solvent to the overpaint layer without saturation of the plaster substrate or disrupting the pointing marks was required.

Initially a 2% Pemulen TR-2 and benzyl alcohol gel polymer in deionized water, neutralized with triethanolamine at a pH of 7.5 was applied to the overpaint. After duration of ½ - 2 hours (without damage to the plaster substrate) the slightly congealed gel and overpaint was removed with compressed air. The compressed air cleanly lifted the paint and gel from the surface. The plaster surface was cleared of any remaining gel and overpaint with a solution of deionized water and triethanolamine pH adjusted to 8.5 and cotton swabs. (As the treatment progressed, the viscosity of the gel was increased to a 4% solution to reduce dripping and pooling of the gel. Even thicker Pemulen/benzyl alcohol solutions will be tested in future treatments.)

Figure 3.
During Treatment –
After paint removal but before removal of paint residues.

Using Pemulen with the MCP

by Chris Stavroudis

Pemulen can be used two ways. While it always gels an aqueous solution, it can function as an ersatz surfactant, as demonstrated in the Holy Innocents Mural Project, and it can be used to build and stabilize an emulsion. While building an emulsion that would stay together for more than a few seconds used to be a matter of luck and trial and error, Pemulen makes it work almost every time.

By combining Pemulen with the MCP, one can make a range of emulsions with different properties very quickly. As with the other modules of the MCP, this allows for more thorough testing and, hopefully, finding the best formula.

The trick to integrating Pemulen into the MCP is making stock Pemulen gels that are concentrated and pre-set to the pHs of interest. In practical terms, a gel concentrate made at twice (2x) the desired working concentration seems to work best. A 2x concentrate can be easily mixed with other aqueous components but still allows the addition of two additional components (surfactant, chelating agent, ionic strength buffer).

Generally, a 1% Pemulen gel is good to begin making emulsions, so a 2% Pemulen concentrate is the starting point for use with the MCP.

pH 6.5: Suspend 4g Pemulen TR-2 into 100mL distilled or deionized water, stir until uniform and well dispersed. Mix approximately 3.15g (2.8mL) triethanolamine into 95mL water. With vigorous stirring, mix the Pemulen suspension with the TEA solution. Using the procedure below, adjust to pH 6.5 with additional TEA; and bring final volume to 200mL.

pH 7.5: Suspend 4g Pemulen TR-2 into 100mL distilled or deionized water, stir until uniform and well dispersed. Mix approximately 5.9g (5.2mL) triethanolamine into 90mL water. With vigorous stirring, mix the Pemulen suspension with the TEA solution. Using the procedure below, adjust to pH 7.5 with additional TEA; and bring final volume to 200mL.

pH 8.5: Suspend 4g Pemulen TR-2 into 100mL distilled or deionized water, stir until uniform and well dispersed. Mix approximately 10.48g (9.44mL) 10% sodium hydroxide solution into 85mL water. With vigorous stirring, mix the Pemulen suspension with the TEA solution. Using the procedure below, adjust to pH 8.5 with additional 10% NaOH solution; and bring final volume to 200mL.

To measure the pH of a Pemulen gel, remove a small amount of the gel and dilute with distilled or deionized water until the solution is a thick, evenly dispersed liquid. A pH meter can be used to measure the pH of the thinned gel. If the pH is low, add a bit more base to the stock gel, mix well, and repeat the testing process. You should rinse your pH electrode in dilute sodium hydroxide (~1%) to ensure that the Pemulen is dissolved away before rinsing the electrode in tap or distilled water between measurements.

To prepare the 1% working solution dilute the stock Pemulen gel 1:1 with other aqueous preparations.

To use the stock Pemulen gel with the MCP, dilute as follows: for each 5mL of stock Pemulen, add 2mL of a concentrated MCP stock solution and 3mL water. If adding two MCP components, add 2mL of each MCP concentrated stock solution and 1mL water to the 5mL of stock Pemulen gel.

Once the Pemulen is diluted to a working concentration, the magic can begin. Typically, a very small amount of a non-water miscible solvent is added to the Pemulen solution and shaken to form the emulsion. Suitable candidates are benzyl alcohol, xylene, and mineral spirits.

Start at something like 2% solvent. The solvent concentration can be increased if the emulsion proves to be ineffective. According to the spec. sheet, Pemulen TR-2 is supposed to be able to form a stable emulsion with up to 50% solvent. I've never been able to get more than 30-40% into suspension.

By varying the polarity and aromaticity of the solvent, the "power" of the emulsion can be changed. I will usually make up a smallish working batch of the 1% Pemulen with components like chelating agent or resin soap added. I will then take smaller amounts of that solution and shake in 2% of benzyl alcohol. If that's too aggressive, I'll try 2% xylene; and if that's still too strong, 2% VM&P naphtha. One can also play with increasing the solvent concentration.

As with any cleaning system with a non-volitile component, the Pemulen must be cleared from the surface. Water will work, but I prefer to use pH adjusted mixtures of dilute ammonium hydroxide and acetic acid.

One of the really nice things about a Pemulen-based emulsion is that it often will work on a cleaning that would have required solvents. Not only are the Pemulen based solutions largely aqueous, they are cleared with an aqueous system as well. This can often afford the conservator the opportunity to clean a surface that would have required unhealthful and smelly organic solvents with a water-based system.

Making the pH adjusted water for clearing:
(These work for clearing aqueous MCP solutions as well.)

pH 6.5 solution, 1000μS conductivity: 1mL acetic acid (glacial – 100%) in 1L distilled or deionized water. Set the pH to 6.5 with 10% ammonium hydroxide solution (1mL concentrated ammonium hydroxide added to 9mL water). Dilute to 2,000 mL.

pH 7.5, 1000μS conductivity: 1mL acetic acid in 1L distilled or deionized water.
Set the pH to 7.5 with 10% ammonium hydroxide solution. Dilute to 1,900 mL.

pH 8.5, 1000μS conductivity: 1mL acetic acid in 1L distilled or deionized water. Set the pH to 8.5 with 10% ammonium hydroxide solution. Dilute to 3,000 mL.

Annual Meeting Presentations

The 2010 WAAC Annual Meeting was held September 15 - 18 in Portland, Oregon. The papers from the meeting are listed below along with summaries prepared by the speakers.

Breaking through the Glass Ceiling: Exhibiting Art under Natural Light at LACMA

Mark Gilberg, Charlotte Eng, and Frank Preusser

In February 2008 the Broad Contemporary Art Museum (BCAM) opened on the campus of the Los Angeles County Museum of Art (LACMA). Designed by the renowned architect, Renzo Piano, the three-story building features 60,000 square feet of gallery space, a distinctive red escalator that transports visitors to the third-floor main entrance, and a horizontal roof composed of glass panels and saw-tooth skylights that channel north light into the third floor galleries while excluding direct sunlight.

The use of diffuse natural light to illuminate the third floor galleries is one of the character defining features of the building and was purposely incorporated into the design to take advantage of the varying intensity and color of natural light to enhance the visitor viewing experience.

To control the amount of light entering the building a passive roof-light system is used consisting of three layers: (1) inclined fixed external shading, (2) external motorized roller blinds, and (3) horizontal roof glazing. Using this passive system the total illumination exposure and the instantaneous light levels are controlled.

In this paper, the authors will review the design of the roof lighting system and present an assessment of its overall effectiveness using environmental data collected over the past two years. The practical implications associated with recent changes in museum architecture to take advantage of diffuse natural light to illuminate artwork will be discussed in terms of the changing nature of exhibition and conservation practice.

The New Mexico History Museum: Before and After Opening

Anya McDavis-Conway

A wide array of conservation challenges were faced both before and after the opening of the New Mexico History Museum (NMHM). The NMHM opened Memorial Day weekend 2009 in Santa Fe and strives to tell the story New Mexico's vibrant and multicultural past (and present) through its artifacts.

The entire New Mexico Department of Cultural Affairs conservation staff was involved and invested in the opening of this new museum, which is the largest in the state. This talk focuses on several of the difficulties encountered before and after opening of the museum, and will share some of our department's experiences and lessons learned. Included in our initial concerns were: preparing objects for long-term display, the exhibit environment, and working with an external design firm.

Before construction began or a single object was moved, extensive planning went into the creation of the NMHM, which was built to house and display the history collections of the Palace of the Governors (POG). The POG, a historic adobe building built in 1610, is located on the main Santa Fe plaza and was renovated to house the Museum of New Mexico in 1909. Opening the NMHM gave the POG the ability to have more gallery space as well as a controlled environment to display and safely store its collections.

As the museum was being constructed, The NMHM/POG was awarded a National Endowment for the Humanities (NEH) grant in 2007 in order to move and rehouse its 3D history collection. This collection of 10,735 objects includes such diverse artifacts as leather saddles, large furniture, household items, weapons, and fine jewelry.

After the museum's opening, the NEH project has allowed us to finally unpack items, reorganize, and provide objects with customized safe storage mounts kept on compactor units. This complex project, which includes environmental monitoring and IPM, will help to ensure the long term preservation and accessibility of these collections. Although the NMHM is a modern facility, working in a new building and sometimes unknown environment has presented challenges.

It has been a job requirement to act quickly and answer questions such as: how can eight pianos be relocated given that a smaller elevator was installed in the off-site storage building after the objects were originally moved in? What happens when your specially designed storage compartments are just too small for antique pistols? How do you deal with mysteriously leaking oil in exhibit galleries? We strive to work through these and other issues while collaborating with other departments and still always keeping the best interest of the NMHM.

White Stag Block

Art DeMuro

Art DeMuro has been a developer of historic properties in Portland for nearly twenty years. In this presentation, he will discuss his most challenging and impactful project to date—the White Stag Block—which brought back to life three turn-of-the-century buildings in the Skidmore/Old Town Historic District. Art will discuss the restoration of some of the key historic features such as cast iron elements, wood storefronts, fire-damaged interiors, and deteriorated plaster.

In Pursuit of the Ideal: The Restoration of the Sainte-Chapelle

Brooke Masek

"To restore a building is not to preserve it, to repair, or rebuild it; it is to reinstate it in a condition of completeness which could never have existed at any given time."

Viollet-le-Duc, Dictionnaire raisonné de l'architecture francaise du XIe au XVIe siècle, 1868

The early 19th century found France in a state of political turmoil. Still reeling from the Revolution, the French were unsure of their government and what it meant to be 'French.' By 1830, however, some stability had returned after the July Revolution and the ascension to the throne of Louis-Philippe. It was now important, more than ever, to establish a government that helped to

define what it was to be 'French.' The idea of formulating a national heritage was dominated by a scientific approach that would demarcate those monuments considered to be "eternal masterpieces and specimens of each epoch." Using the 1857 text *La Sainte-Chapelle de Paris* on the restoration of the Sainte-Chapelle in Paris published by its restorers, this paper explores the 19th-century idea of 'restoration,' how it was used in the restoration of the Sainte-Chapelle, and how it has affected our current understanding of Gothic architecture today.

Brass and Wood Screws in American Furniture

Chris White

The original brass hardware on American furniture is a useful documentary resource that records the aesthetic style of a period. The chemical composition of that metal also records the developing technology of the time. This study outlines the changes in brass alloy composition as observed using X-ray fluorescence analysis on dated examples. It will summarize the results and conclusions of brass hardware analyses from the American furniture collection of the Museum of Fine Arts, Boston and offer some suggestions for why these changes occur. A coincident study of 18th and 19th-century wood screw morphology will also be summarized, indicating the uses and limitations of wood screws in dating.

Desalination of Archaeological Ceramics: Measuring Progress and Success

Chris White

Ceramic desalination is a common treatment for archaeological materials from high salinity environments and is often performed to prevent salt-based damage. The Arizona State Museum Conservation Lab has performed a significant number of desalination treatments that have resulted in revisions to common desalination calculation practices as well as the tentative development of several proxy measurements. The revised measurement technique provides a flexible tool to monitor desalination treatments and has highlighted the strengths and limitations of current practice. The numerous desalination treatments offered Arizona State Museum staff the opportunity to begin to understand ceramic desalination, its pitfalls, and potential. The work was undertaken as part of conservation treatments associated with the Pottery Project, a project that included assessment, preservation, rehousing, and research on more than 20,000 southwestern Native American ceramic vessels.

Understanding Performance Properties and Limitations of Coatings for Metals

Tami Lasseter Clare

The conservation and preservation professions in the USA and in Europe face the real prospect that in the near future there will be no viable clear coating systems to protect outdoor monuments, sculptures, buildings, and other significant artifacts made of copper or iron alloys against corrosion and degradation.

If regulations outlawing the use of solvents common to the formulation and application of such coatings are expanded in the next two or three years, the only options available may be short lived wax pastes that typically require reapplication every one to three years and contain some percentage of solvents that are also likely to be restricted. In this paper, novel, environmentally safe, and long lasting clear coatings for metal will be discussed. Through the use of a variety of additives, the mechanical and chemical properties of coatings may be tuned to improve coatings' performance.

Uncovering Mysteries of a Chinese Burial Relic

Tami Lasseter Clare

In the Han Dynasty elaborate bronze Money Trees were entombed with the deceased to provide prosperity in the afterlife. In the collection of the Portland Art Museum is a curious example of one of these trees: it shows heavy soil encrustations and plant roots that have grown onto the branches. And, some of its branches appear to have been replaced while other broken branches may have been repaired. This study demonstrates how scientific analysis (XRF, FTIR, and X-radiography) of the tree can be used help establish whether all or part of the tree could date to the Han dynasty.

Art Conservation at the JSMA

Jan Cavanaugh

Public awareness of art and artifacts conservation has increased exponentially over the last 20 years or so. At the same time demands have risen on institutions to meet national standards aimed at preserving cultural property. After the Portland Art Museum, the main museums of art in Oregon are at universities. The largest one is the Jordan Schnitzer Museum of Art at the University of Oregon in Eugene.

The museum has become more and more actively engaged in conservation concerns since 1990. That year an IMLS General Conservation Survey was conducted to improve collection care, address environmental conditions, and identify long-range conservation goals. Eventually funds were raised for a major renovation and expansion of the museum, which was completed in 2004. This paper will discuss the conservation projects of the JSMA that have been supported by grants, focusing on those since the expansion.

Developing Recommendations for Historic Interiors that Are Compatible with Art and Object Conservation Recommendations: A Case Study

Jill Johnson

This presentation will address maintenance and capital improvement recommendations for buildings owned or leased by the Southern Oregon Historical Society (SOHS). Of the 28 buildings under the management of SOHS, seven house the institution's research library or collections. Six of the seven buildings are historic or potentially historic; they include the Old Jackson County Courthouse, the Catholic Rectory, the Beckman Bank, and the C.C. Beckman House in Jacksonville; the Hanley House, located outside Jacksonville; and the History Center in Medford.

The recommendations were prepared by Historic Preservation Services. Com-

panion recommendations concerning the SOHS collections were prepared by Marie Laibinis-Craft of MLC Objects Conservation, LLC, Portland, Oregon and integrated with the architectural recommendations into a jointly-issued report. The presentation will examine the preparation of recommendations as a multidisciplinary effort to ensure that guidance provided for the historic interiors and collections was mutually compatible. Recommendations that will be discussed include: daylighting controls; environmental controls; non-structural restraints for elements on exhibition and in storage; pest management; emergency planning; and security and fire protection.

Finding Cures for the Common Heritage Flu

Kyle Jansson

Cultural organizations across the West are dealing with a variety of ailments resulting from unstable funding, higher public expectations, and limited capacity. Taking aspirin, drinking plenty of liquids, and enjoying long naps won't solve them. Several coordinated efforts are underway in Oregon to identify systemic cultural issues and creatively find treatments for them. The treatments might change the way the state's heritage organizations collect and preserve materials, as well as how preservation training is provided.

Parafilm M Fills for a Mexican Lacquered Gourd Vessel

Yoonjo Lee

An example of a Mexican lacquered gourd container from the Michoacán State in Mexico was selected to be in the exhibition at NMAI's George Gustav Heye Center in New York City opening in the Fall of 2010. A made-for-sale item, the gourd container was an eye-catching red on black using the rayado incising technique to create a flora and fauna design.

The container had some minor losses to the red lacquered design, but the red lacquer on the lid was actively flaking and tenting, and the majority of the flora and fauna designs had significant losses. As a decorative piece, the beauty of the gourd container was compromised by the amount of loss on the lid; and to give the container and lid a cohesive aesthetic appearance, the areas of loss needed to be filled. A filling technique using Parafilm M was selected to replace the losses in the red lacquered areas on the lid. A method mentioned in a *JAIC* article in 1998 by Marianne Webb,was successfully utilized to revitalize the beauty of this Mexican lacquered gourd container.

The Putti Project

Jonathan S. Fisher

This talk discusses t he restoration and preservation of two caste zinc fountain sculptures for a historic property in Northern California. The figurines were badly damaged and had been repaired before; their patina had been ruined, there were cracks and distortions, as well as separated parts.
My plan was to collaborate with experts in the field and research a variety of treatment options before deciding on best methods and materials available. After completing a thorough examination, documentation of condition, and analysis of possible treatments, the process of restoring the Putti was charted, and then implemented step by step. Once the work was completed and the figures were made whole again, they were ready to function in their intended setting, performing as fountains, at the entrance to a grand garden.

Products: PC7 Epoxy Paste, Protective Coating Co.
Super Alloy 1, Muggeyweld LLC.

Technical Study and Conservation of Two Japanese Masks: Investigating Their Attribution as a Pair and Stabilizing Fragile Matte Paint

Linda Ying-Chun Lin

The impetus for carrying out a comparative technical study on two stylistically related Japanese demon masks in the collection of the UCLA Fowler Museum was to answer the questions regarding their material composition, provenance, and suspected manufacture by the same hand as noted in the museum's records. A study of the Fowler masks' iconographic origins revealed that the pairing of open and closed-mouth expression of each mask represents "aun no ittsui," a Buddhist iconography that was adopted by the purification rituals indigenous to the Japanese religious tradition of exorcising evil spirits embodied by mask-wearing scapegoat demons.

As the pairing of the iconographic expressions supported the pairing of the Fowler masks when used in the same ritual context, results of the technical investigation also informed that the masks were manufactured in close association with one another. However, there lacked convincing evidence that could firmly attribute the masks to the same maker. Commencing with an analytical investigation into the masks' material composition and current state of preservation, this research project concluded with stabilizing the fragile matte paint and locally reinforcing the structural defects with a light-weight and mechanically-reversible fill.

Nip, Tuck, and Fill: Producing Digitally Printed Textile Infills for a Group of Pre-Columbian Textiles at LACMA.

Lynn Ellen Bathke

A group of Pre-Columbian textiles on rotation for the light sensitive gallery at the Los Angeles County Museum of Art were considered suitable for a new method of loss compensation. At LACMA, a fine art museum, aesthetics and imagery of objects are a major priority for display and exhibition. The imagery within these textiles is integral to contextualizing the object's history and relationship to the viewer. Currently, through the technological development of digital textile printing, transferring an image directly onto fabric provides a conservator with unique treatment options. The process of creating a digitally printed infill is a collaborative effort, and is dependent upon three main steps.

One, a digital image file is created for reproduction using Adobe Photoshop. Conservation photographer, Yosi Pozeilov, produced these digital images along with the consultation of conservation. Two, the digital image file is used to print on a suitable substrate with a digital textile printer. CadFabulous, a Los Angeles based printer, supplied the printing materials. The Mimaki TX4, a Japanese dye-sublimation printer, was used to print the photographic infill. In order to create a suitable digital textile

print for use in conservation, a close collaboration is required between the conservator and printer. Three, the final textile print is used to infill the area of loss on the textile, and complete the conservation of the object for exhibition.

While this process provides conservators with a unique option for conservation, display, and exhibition, further analysis of dye fading and longevity of prints needs consideration.

Building as Art: Preserving the National Maritime Museum

Mary Slater, Paul Nachshiem, Jason Wright, Mark McMillan, Katharine Untch, and David Wessel

The building that currently hosts the Maritime Museum, a National Historic Landmark built in 1939, was originally the main building of San Francisco Aquatic Park, a Works Progress Administration (WPA) project carried out during the Great Depression. The building was intended to serve as a bath house with changing rooms, an emergency hospital, banquet rooms, sun rooms, and a lounge.

The structure, built to resemble an ocean liner, was designed in the streamline Moderne style by the architects William Mooser II and William Mooser III. A team of artists including Hillare Hiler and Seargeant Johnson contributed to the cohesive aesthetics of the building. The reinforced concrete building is ornamented with nautical architectural elements, metalwork, and a a multitude of WPA art works including murals, mosaics, bas reliefs, and terrazzo floors. The result is a building that is equal parts art and architecture, where curvilinear forms combine in a monumental study of light and water as expressed by the sea. Over time, innovative architectural design and artistic details have proven vulnerable to climatic conditions, resulting in deterioration of building features and artworks alike. Water leakage through window frames and flat roof decks has undermined plaster and canvas mural substrates. The original attachment method of the bas relief led to staining and efflorescence of the slate panels. In addition, changing tastes and political agendas have led to the over-painting of several murals. This paper will explore how Architectural Resources Group has been working with the National Park Service to develop and implement repair, rehabilitation, and conservation solutions to address issues that threaten the significant architecture and works of art in this charming San Francisco icon.

Identifying Salts during the Desalination Process Using Spot Test Papers

Nancy Odegaard, Pat Hill, and Werner Zimmt

Desalination is a relatively common conservation treatment that is used to remove soluble salts and prevent ongoing damage on objects. Protocols have been developed to carefully track the results for thousands of archaeological objects every year because of the direct relationship between the salinity of a solution and the conductivity of a solution. While conductivity readings are generally used to interpret quantities of soluble salts through the measure of current carried by salts in bath solutions, they cannot be used to calculate exact amounts. Nor do they indicate the types of salts present.

Analytical instruments used for identification salts have included XRD, FTIR, Ion chromatography, Microscopy, and Microchemistry. This paper describes a study of EM Quant test strips which allow for an inexpensive, time-saving, and semi-quantitative determination of chloride, nitrate, and sulfate ions held in bath solutions in the mg/l range without additional preparation of the samples.

Conservation and Beyond: The Fire Restoration of the Governor's Ceremonial Suite in the Oregon State Capitol

Peter R. Meijer

As a result of the third fire in the Oregon State Capitol's history, the Governor's Ceremonial Suite required complete restoration and renovation from fire and smoke damage. Rapid response by the Facility Services saved historic material from disposal by fire restoration contractors allowing the conservation and restoration teams to restore the historic spaces. A combination of conservation and restoration were employed for the repair and replacement of fixtures, finishes, exterior marble, interior walnut paneling, plaster work, and WPA pieces. All work was based on research, field analysis, conservation standards, and preservation practice. The presentation of the restoration will elaborate on the coordination between conservators, preservation architects, design architects, owners, and insurance representatives. The decisions to employ conservation principles or move beyond conservation will be discussed and elaborated upon.

Chinese Altars at the Historic Site of Kam Wah Chung & Co

Thomas Fuller

There are several Chinese altars in the historic site of Kam Wah Chung & Co. in John Day, Oregon. This paper concerns the conservation of these altars during the period 2006 to 2008. It also presents the search, not ended, for the material cultural context for the altars and their paper-based offerings.

The Use of the iPad as an Image-Based Tool for Condition Reporting and Location Marking for Scientific Analysis at LACMA

Yosi Poseilov

For years the Conservation Center at LACMA has tried to implement an image-based condition reporting system using digital technology. It was not until recently that this implementation became a viable solution with practical results using the iPad platform as the technological base. This presentation reviews briefly the history of condition reporting and establishing a workflow that is simple and organic using the touch-based device. Examples of this digital documentation will be shown, positive and negative aspects will be discussed, and future work will be outlined.

Silver Tarnishing Properties of Gloves Used in Conservation

Will Hoffman

Over the last decade, concern has grown over the possible presence of harmful materials, such as sulfur and chlorine,

in gloves used in conservation. Unfortunately, upon reviewing the current conservation literature, little information on the subject was found. Therefore, this project was designed to determine if any commonly used gloves induced tarnishing to silver and sterling silver.

Gloves tested included cotton, cotton with rubbery grips, latex, three nitrile (blue, purple, green colors), vinyl, and nylon with polyurethane fingers. An Oddy test was adapted in which samples of the various glove types where placed in direct contact with coupons of both pure and sterling silver. The gloves were also tested for chlorine (Beilstein test), soluble chloride ions (silver nitrate), and sulfur in a reduced oxidation state (azide test).

Further analysis was conducted using Fourier Transform Infrared Spectroscopy (FTIR) via an Attenuated Total Reflectance (ATR) attachment to determine if glove materials transferred residues, which could possibly lead to tarnishing. Results have shown that all glove types except for the nylon glove with polyurethane fingers induced tarnishing ranging from slight to severe with the worst tarnishing associated with high content of sulfur in a reduced oxidation state in glove materials. FTIR analysis indicated that only white cotton and one nitrile variety glove did not transfer residue.

Exploring 19th-century Restorations; the Study of Four Apulian Vases from Berlin

Marie Svoboda

This paper will present the study and treatment of a group of South Italian vases, a collaborative project initiated in 2008 between the Antikensammlung in Berlin and the J. Paul Getty Museum. The history of the vases and general scope of the project will be reviewed, focusing primarily on the examination of two colossal artifacts from this group, loutrophoroi (F 3263 and F3264), both of which were restored in the early 19th century. Information obtained from historic documentation, visual examination, and scientific analyses provides clues for who the 19th-century restorer may have been, and raises issues regarding their ultimate display.

Susanne Friend
column editor

Articles You May Have Missed

"*Gross Clinic* Undergoes Treatment in Run-up to Show," *Philadelphia Inquirer,* 05/02/2010

Thomas Eakins' masterpiece, *The Gross Clinic* (1875), is undergoing conservation treatment at the Philadelphia Museum of Art. The 8-by-6-foot canvas has had a checkered history of restoration and intervention which will be the subject of an exhibition *An Eakins Masterpiece Restored: Seeing The Gross Clinic Anew*. The show will explore the history of the painting as a work of art subject to the shifting desires and tastes of its longtime owner - Thomas Jefferson University - and the efforts of early conservators and restorers.

How to return this painting to what Eakins intended has been the subject of intense discussion among curators and conservators at the Museum and the Pennsylvania Academy of the Fine Arts, its institutional owners, for two years. X-rays revealed that Eakins changed his composition during work on the painting.

Conservators and restorers of the past dissolved figures, erased final finishes, exposed lower paint layers, and weakened the composition. In the 1940s, the canvas was glued to two pieces of plywood. Less than two decades later, the plywood had started to warp. The museum's respected conservator at the time, Theodor Siegl, painstakingly removed the wood and glue.

That effort not only saved the painting from disaster, but it also has allowed conservators to easily remove all restoration work; apply a translucent, removable varnish; and ponder what to do next.

"Self-portrait Fingered by Leonardo da Vinci," *The Australian*, 05/03/2010

Three fingerprints have led experts to conclude that a tattered picture considered inferior by its owners is a self-portrait by Leonardo da Vinci. It could be worth almost $290 million.

A team of scientists and forensic experts have judged the portrait, discovered in 2008, to be a genuine da Vinci after partially matching the prints on the work with another painting by the master. Carbon dating found the portrait was painted between 1478 and 1520.

Nicola Barbatelli, a medieval historian who discovered the painting at the home of an aristocratic family in Salerno, has no doubt the work is by da Vinci. "It was kept in a sideboard because it was considered inferior to the rest of the family's collection," he said.

"Ghent Altarpiece to Undergo Restoration," *The New York Times*, 05/04/2010

In the nearly six centuries since its completion in 1432, the Ghent Altarpiece, one of the world's most renowned works of art, has not exactly been a stay-at-home kind of masterpiece. It was taken apart and hidden twice in the 16th century to protect it from iconoclasts and Calvinists. It was hauled to Paris two centuries later as a war trophy. In 1934 thieves stole two of its panels, and during World War II it was seized by the Nazis and kept in a salt mine.

The altarpiece, by Hubert and Jan van Eyck, is showing its age, and on Wednesday officials from Belgium and the Getty Foundation announced the beginning of an extensive restoration project, which will take place while the work remains on public view at its home, the St. Bavo Cathedral.

The Getty is providing $230,000 toward the initial stage of the project, a yearlong examination of the altarpiece.

The foundation is also contributing $400,000 toward another major restoration project already under way in Florence, of *The Last Supper* by Giorgio Vasari, which was severely damaged during a 1966 flood and has not been on public view since. The grants are part of an initiative aimed at training a new generation of experts to restore paintings on wood panel, a highly specialized conservation field.

"'Fake' Raphael Turns out to be Worth £25m," *Telegraph*, 05/07/2010

A portrait of a young woman, which had been dismissed as a fake Raphael and lay forgotten in the basement of an Italian palace for 40 years, has been confirmed as genuine by art experts and could be worth up to £25 million.

The small portrait has languished in a storeroom beneath a palazzo in Sassuolo, near Modena in northern Italy, since the 1970s. But art historians now believe it to be a first draft by Raphael of part of a larger painting, (or 'The Pearl'), which hangs in Madrid's Prado.

Mario Scalini, an art expert, came across it when he set about sifting through more than 25,000 works stashed in the palazzo's vaults, which belongs to a noble family who ruled the Duchy of Modena for four centuries. He had a hunch that it was more important than had been assumed, with the main clue being the quality of its frame. He had the painting analysed by experts at a research institute in Pisa.

Using infra-red and ultraviolet ray "multilayer" technology, they were

able to see through accumulated layers of paint. It is thought the portrait was started by Raphael, but finished by one of his most prominent pupils, Giulio Romano, after Raphael's death in 1520.

"Rescuing Art From the Rubble of the Quake," *New York Times*, 05/10/2010

Susan Blakney, a paintings conservator from New York, scrambled up a mound of rubble left by the collapse of the Episcopal Holy Trinity Cathedral, searching for small shards of the cathedral's murals. The cathedral is a cherished part of this country's cultural heritage and most of its murals were destroyed in the earthquake that struck in January.

The rescue is being organized by the Smithsonian Institution, which opened a center in June where American conservators will work side-by-side with Haitian staff members to repair torn paintings, shattered sculptures, and other works pulled from the rubble of museums and churches.

Haitian artists and cultural professionals have been conducting informal salvage operations for the past four months. But the Americans are bringing conservation expertise — there are few if any professionally trained art conservators in Haiti — and special equipment, much of it paid for by private money.

The initiative, in its swiftness, its close collaboration with a foreign government, and its combination of private and government financing, represents a new model of American cultural diplomacy, that organizers believe stands in stark contrast to the apathy Americans were accused of exhibiting during the looting of Iraqi artistic treasures in 2003.

The initial financing is coming from three federal agencies and the Broadway League, the trade group for theater owners and producers. Smithsonian officials say the project will cost $2 million to $3 million over the next year and a half.

"UPS Truck Crashes into Hirshhorn Museum after Running off Street," *Washington Post*, 05/11/2010

A delivery truck ran off the road Monday night, broke through a concrete barrier and smashed into the Hirshhorn Museum and Sculpture Garden on Independence Avenue SW, in the heart of tourist Washington. In an incident with little if any recent precedent on the National Mall, the truck shattered a plate-glass window that forms part of the outer wall of the museum's lobby.

The driver was taken to a hospital with serious injuries. The museum had closed to the public three hours before the 8:30 p.m. crash, and no other injuries were reported. The truck ran through the low concrete structures that serve as flower pots and provide protection and came about one foot into the building. It appeared that the concrete barrier slowed the truck. No art was affected by the crash, officials said.

"Art Seals Reveal Their Secrets," *PhysOrg.com*, 05/19/2010

A team led by Sichun Zhang at Tsinghua University in Beijing has now developed a new imaging mass spectrometric process to identify paintings and calligraphy without damaging the art pieces.

As the scientists report in the journal Angewandte Chemie, the secret to the success of this method is a low-temperature plasma probe that gently removes molecules from the surface of the art works. The temperature of the plasma reaches only 30 °C.

The helium plasma ejects molecules from the surface of the sample and ionizes them. This does not damage works of art. The scientists used this new technique to analyze seals, which are stamped impressions used as signatures and means of authentication on Chinese paintings and calligraphy. The team was able to use their new microplasma probe to reveal variations in the composition of the ink of individual seals, making it possible to differentiate between authentic and inauthentic seals.

"Bank of America Merrill Lynch Announces Unique Art Conservation Funding Programme," *ArtDaily.Org*, 05/26/2010

Bank of America Merrill Lynch today launched a major initiative to help conserve important works of art and cultural treasures. As part of the Bank of America Merrill Lynch Art Conservation Programme, The Bank of America Charitable Foundation, Inc. will provide grants to restore art works to preserve their unique cultural value for future generations. The programme is expected to grant at least US$1 million per year, with the actual outlay to vary based on the submissions and the desire to reach multiple geographies and media.

"Aboriginal Rock Art May be 40,000 Years Old," *The Sunday Times*, 06/01/2010

A red ochre depiction of two giant extinct birds on an overhanging rock in northern Australia could be one of the oldest paintings in the world. Scientists have calculated the artwork pre-dates European settlement in Australia and could be up to 40,000 years old.

The large painting was discovered on the Arnhem Land plateau in the Northern Territory by members of the Jawoyn Association Aboriginal Corporation during routine patrols of the area about two years ago. However archaeologists only visited the site for the first time last month.

Archaeologist and rock art specialist Ben Gunn, who assessed the painting of the two large birds with outstretched necks, sent a photograph of the rock art to a local palaeontologist who determined it was a depiction of the megafauna species Genyornis. The Genyornis – a heavy bird which had a broad, rounded beak and was about twice the size of an emu – became ex tinct about 40,000 years ago. "Either the painting is 40,000 years old, or the Genyornis lived much longer than we thought," Mr. Gunn told The Times.

He described the image as in good condition but "slightly smudged", and added that there is too much detail in the image for the birds to have been painted through word of mouth. Arnhem Land is a large Aboriginal reserve in the remote north-eastern corner of the Northern Territory which is known for its abundance of ancient rock art.

"Researchers G et a Kick out of World's Oldest Leather Shoe," *Los Angeles Times,* 06/10/2010

Archaeologists from UCLA and Ireland have discovered the world's oldest leather shoe, an exquisitely preserved 5,600-year-old woman's size 7 lace-up, in a cave in Armenia.

The shoe was in such pristine condition that at first researchers thought it was just a few centuries old. It was stuffed with grass, which may have been used to keep the wearer's foot warm or to preserve the shoe's shape for storage. Both the grass and shoe were well-preserved, like other organic materials discovered in the cave on the border between Armenia and Iran, including a winemaking apparatus complete with grapes and three human heads preserved in jars.

Such materials usually degrade over time; the team attributed the unusual preservation to the cave's perennially cool temperature and low humidity and a concrete-like layer of sheep dung that sealed in everything and prevented fungi from destroying the remains.

The artifacts date from the Chalcolithic, or Copper, Age, when the first metal tools began appearing. Radiocarbon dating indicated that the shoe was from about 3,600 BC. Its relatively sophisticated design, however, suggests that the style had already been in use for a long time, said UCLA archaeologist Gregory Areshian, co-leader of the research team. The shoe is shaped to fit the wearer's right foot.

"Funds Too Little for Painting Restoration," *The Telegraph (Calcutta),* 07/04/2010

Johann Zoffany's painting, *The Last Supper,* will be unveiled on Sunday evening at St. John's Church after its restoration over a period of five months. This project jointly undertaken by the Indian National Trust for Art & Cultural Heritage (Intach) and the Goethe Institut/Max Mueller Bhavan, Calcutta, highlights the woeful lack of conservation facilities in this city.

Here, priceless collections of Bengal School artists, the Tagores and others are rotting away in the care of such organisations as the State Charu Kala Parishad, Academy of Fine Arts and Rabindra Bharati Society, which in typically dog-in-the-manger fashion, will not allow them either to be displayed or stored using state-of-the-art technology. Guarding vested interests matters more than heritage. The skills and knowledge of local conservators, too, need to be upgraded through better exposure and workshops. Conservator Renate Kant, who guided and supervised the project, is happy the way things have turned out. The Intach team headed by Subash Chandra Baral, she said, was good at stabilisation of a canvas and documentation, but they "were not used to working so deeply and thoroughly". There has been no concerted effort to train conservators or upgrade their skills. G.M. Kapur, state convener, Intach, says the organisation is keen on collaborating with Goethe Institut as there is great demand for restoring works in the private domain.

"Leonardo da Vinci's *Virgin of the Rocks* Restored to Original Purity," *The Guardian*, 07/14/2010

One of the National Gallery's most precious paintings, Leonardo da Vinci's Virgin of the Rocks, will go back on display this afternoon after an 18-month conservation project revealed details lost for a lifetime under a coat of darkening varnish. The conservation work has convinced the gallery's experts that their painting, a later version of one in the Louvre in Paris, is entirely by Leonardo, one of the greatest geniuses of the Italian Renaissance – and not, as previously thought, partly by his small factory of assistants.

The study of the painting has also established that it was never fully finished. The painting has been in the Gallery collection since 1880 but its uneven finish – with some areas, such as the faces, complete and others, including the angel's hand, barely sketched in – always puzzled scholars.

The mystery deepened in 2005, when x-ray and infrared photography revealed not one, but two, very different underdrawings.

Michael Daley, editor of the Art-Watch journal, is cautiously pleased that this time the conservators have left a thin layer of the old varnish instead of trying to get down to the original paint surface. He is normally the scourge of art restoration projects, particularly attempts to strip old varnish, believing that precious original detail added by the artists, in overpainting or coloured glazes, is usually lost in the process. He also believes many old master artists never intended their paintings to be seen in bright colours, and added their own toning layers of darker varnish.

"Deadly Blaze Devastates Famous Art Conservation Centre," *The Moscow News*, 07/16/2010

Flames have engulfed a major art restoration centre for more than a day, killing two firemen, but the Ministry of Culture is hopeful that art stored in the vaults will emerge unscathed.

The Grabar art centre on Ulitsa Radio, near Kursky Vokzal, has been gutted by the blaze. Art works were being evacuated from the building up until 1 am Friday on Friday, and at the time of writing 60 paintings and 50 pictures have been moved to the Cultural Ministry's vault. Talks with the city museums are being also conducted, to discuss where to store the paintings.

Saving the artwork came at a high price. Firefighters Alexander Dymchikov and Vyacheslav Shakhshin were killed by falling debris after freeing three people from the burning building. The fire has practically destroyed the building and made it unusable. The Grabar centre has long been one of the leading art restoration complexes in Russia. Specialising in ancient and 18th-century Russian art, its most famous projects include restoration work on icons by Andrei Rublev.

"400 Years after His Death, Caravaggio Work is Found," *The Independent,* 07/19/2010

Art experts in Rome are analysing what they believe is a previously unknown painting by the Italian Baroque master Caravaggio. As his homeland marked the 400th anniversary of his death this weekend, the Vatican's official newspaper L*'Osservatore Romano* published the newly discovered work on its front page.

Depicting the martyrdom of St. Lawrence, it was found recently among the possessions of the Society of Jesuits in Rome. It shows a semi-naked young man, his mouth open in desperation with one arm stretched out as he leans over flames. If the suspected provenance is confirmed, it would be the first painting by the Baroque genius to emerge since *The Calling of Saints Peter and Andrew*, which went on display two years ago. The Vatican newspaper did not reveal where the painting is being analysed or by whom.

Interest in the mercurial artist has been raised by recent attempts to shed light on the mystery surrounding his death on 18 July 1619 at the age of 38. The investigation, involving DNA tests and comparisons with living relatives, concluded that the painter was probably buried in Porto Ercole, in Tuscany, after suffering an illness, thereby bringing centuries of speculation, including assassination theories, to an end.

"Expert Finds That Restoring Art Helps Restore Owners, too," *The Times-Picayune*, 07/24/2010

Blake Vonder Haar established the New Orleans Conservation Guild Inc. with the intention of building on the city's solid reputation as a center of furniture restoration. The aftermath of Hurricane Katrina opened the business up to a "whole new world of problems."

Work poured in, in the form of pieces as different as their owners and all afflicted by any combination of water damage, mold, chemical damage, muck, or tearing. To meet demand, the conservation guild, flooded with both jobs and offers of help from restorers around the world, upped its staffing to 40 people. Since Katrina, it has completed more than 6,000 restoration jobs.

Aside from the technical challenges, handling clients' fragile emotions, especially in regard to cherished pieces of art, was "very difficult, physically and emotionally," Vonder Haar said. "Often,

all they had left in the home was what was hanging on the walls." The conservation guild finished clearing its backlog of Katrina paintings just nine months ago, and more than 200 pieces of Katrina-damaged paper -- birth certificates, Bibles, and sentimental scraps -- still await treatment.

The past five years of emotionally draining work have given new meaning to Vonder Haar's appreciation for her work, she said. "You feel like you have a much more important role in recovery," she said. "You're helping people feel whole again."

"Solving the 800-year Mystery of Pisa's Leaning Tower," *The Telegraph (UK)*, 07/28/2010

John Burland, emeritus professor of soil engineering at Imperial College London, has spent the last two decades striving to save - and understand - the Leaning Tower of Pisa. After defying gravity, Italian bureaucracy, and accusations of corruption, it seems he's finally cracked the case.

From 1990 to 2001, the tower remained closed – many doubting it would ever reopen – as the International Committee for the Safeguard of the Leaning Tower strove to save it from collapse. After numerous missteps, Burland ultimately won over the committee with a process called soil extraction. Akin to microsurgery, it entailed drilling out slivers of soil from beneath the northern side of the tower - away from the lean - and allowing gravity to coax the structure back upright.

Work began in 1999, using delicate, Archimedes-screw drills. At the same time, technicians in a piazza-site trailer monitored data from 120 sensors set up inside and beneath the tower.

By the time he called a successful halt, two years later, 70 tons of soil had been removed and the tower had returned to its early 19th-century inclination. Soil extraction brought the tower back by 50 centimetres to four metres off-centre – an amount that reduced the tilt and the stress on the vulnerable first storey enough to be safe, yet maintained the distinctive lean.

Via his data analysis, Burland unlocked the 800-year mystery as to why the tower leans south not north: namely, a fluctuating water-table on the upper layer of silt. By a quirk of local geography, Pisa's water-table rose higher on the tower's north side, often reaching within one foot in rainy season, and this gave the tower an annual ratchet southward.

Armed with this vital information, in 2003, Burland introduced a new drainage system beneath the piazza's north side, one that lowered and stabilised the water-table. The inclination continues to be monitored daily by the OPP and new figures reveal that the tower didn't move at all between 2003 and 2009.

"Stitches in Time for Grand Old Gowns," *zev.lacounty.gov*, 07/29/2010

There's nothing like the prospect of a glamorous Los Angeles debut to make even the most luxurious wardrobe cry out for a little freshening up. Especially when the clothes are hundreds of years old.

When Catherine McLean, the head of textile conservation at LACMA, got the assignment to prepare about 250 ornate European dresses, gowns, suits, and accessories for exhibition, the pressure was on. Not only would it be a race against the clock to ready the garments for the upcoming *Fashioning Fashion: European Dress in Detail, 1700-1915,* McLean and her team also would have responsibility for spiffing up one of the museum's hottest acquisitions in recent years—the multimillion dollar Kamer-Ruf collection, made up of more than 1,000 garments and accessories.

The exhibition had to be ready for the grand opening of the new Renzo Piano-designed Resnick Pavilion. That meant just two years for McLean and company to accomplish hundreds of tasks: refurbishing, stitching, cleaning, and otherwise preparing for their close-ups hundreds of outfits.

"Discovery of Ancient Cave Paintings in Petra Stuns Art Scholars," *The Observer,* 08/22/2010

Spectacular 2,000-year-old Hellenistic-style wall paintings have been revealed at the world heritage site of Petra through the expertise of British conservation specialists.

The paintings, in a cave complex, had been obscured by centuries of black soot, smoke and greasy substances, as well as graffiti. Experts from the Courtauld Institute in London have now removed the black grime, uncovering paintings whose "exceptional" artistic quality and sheer beauty are said to be superior even to some of the better Roman paintings at Herculaneum that were inspired by Hellenistic art.

They were created by the Nabataeans, who traded extensively with the Greek, Roman, and Egyptian empires and whose dominion once stretched from Damascus to the Red Sea, and from Sinai to the Arabian desert. Such is the naturalistic intricacy of these paintings that the actual species of flowers, birds, and insects bursting with life can be identified. They were probably painted in the first century, but may go back further. Conservation took three years. The paintings are not at the main site, but at the less well known canyon of Siq al-Barid in Beidha – nicknamed "Little Petra" – about 5km away.

"Funds for Jersey's Glass Church Restoration Project," *BBC News*, 08/27/2010

One of Jersey's most famous churches has been awarded government funding for a major restoration. St. Matthew's Church at Millbrook - known as the Glass Church - is decorated in Art Deco Lalique glass dating back to 1934. The Friends of the Glass Church have already raised £140,000 towards the restoration fund and work has been completed on the roof of the church. The church is internationally acclaimed as the only remaining and complete example of Rene Lalique's heavy, clouded glass. Much of the restoration and conservation works will be undertaken by local craftspeople, although some specialist assistance will be required.

Conservation

Patio Rose

ORIGIN Cocker, Britain, 1986
PARENTAGE (["Sabine" x "Circus"] x 'Maxi') x 'Darling Flame'
FLOWER SIZE 2.4 in (6cm)
SCENT Light, sweet, and musky
FLOWERING PERIOD Repeats well
HEIGHT / SPREAD 3.3 ft (1m) / 1.6 ft (50 cm)
HARDINESS Zone 6
AWARDS Dublin GM 1986

Conservation is somewhere between a Miniature and a Patio rose, although its narrow, upright habit sets it apart from both. The semi-single flowers are pretty, with orange petals grading to yellow at the center. They keep their color fairly well as they age, fading only very slightly from pale orange to salmon. The flowers come in compound clusters of up to 40, and the whole stem seems to burn with color. Conservation has small healthy glossy leaves and compact, upright stems. It is a useful container plant and responds well to pruning.

from: The American Rose Society Encyclopedia of Roses, *Charles and Bridgid Quest-Ritson*