
Annual Meeting Abstracts

The 2017 WAAC Annual Meeting was held September 25 - 28 in Salt Lake City, Utah.

The papers from the meeting are listed below along with summaries prepared by the speakers.

Changes in Small Museum Professional Development and Outreach in the Internet Age

M. Susan Barger

Professional development in collections care offered for people in small museums has traditionally been offered through site visits, face-to-face conferences or workshops given by experts, and classes offered through various organizations. This is now changing to online contact offered through webinars, listservs, social media, and online courses.

Online contact offers the possibility of reaching a much larger audience for instructors and it can significantly lower the cost for participants. This talk will look at the changes in professional development for smaller institutions including the advantages and disadvantages of online professional development over face-to-face contact using real-world examples.

Revisiting the Treatment of a Pair of Malby Globes at the Marriott Library, University of Utah

Lorraine Bigrigg

Historic globes are fragile objects. Few survive without some evidence of change to the varied materials used in their fabrication, including damage to the globe shell, loss of the paper or design media, staining, entrenched grime, discoloration or loss of the protective varnish, or poor-quality repairs.

While an improvement in condition is the primary focus of treatment and the foundation of an improvement in appearance or legibility, filling losses to complete the cartographic record can have a major effect on the integrity of

an historic globe. When designing a conservation treatment, it is critical to compare how a particular globe could appear relative to its individual condition, and how that globe should appear relative to other examples of the same edition.

This talk presents the use of digital photography, image manipulation, and archival printing as a means of filling losses on the surface of globes. It focusses on the pair of mid-nineteenth century large diameter Malby globes on view in the University of Utah's Marriott Library. Purchased in England by F.D. Richards, an apostle in the LDS church, the pair was brought by pioneer wagon to present to the University of Deseret as magnificent educational tools and marvelous symbols of academic scholarship.

Cut from the Same Cloth: Comparing and Contrasting Two Pastels by Edouard Manet

Rachel Freeman

Over the past few years, the Art Institute of Chicago has focused on digital formats (online scholarly catalogues) as a methodology to systematically study and publish on its collection. The subject of one of the catalogues, Edouard Manet, offered the opportunity to complete a brief technical examination of the two artist's pastels on canvas that belong to The Art Institute of Chicago, *Man with a Dog* and *Portrait of Alphonse Maureau*.

This paper compares and contrasts these two artworks. Previously thought to be dissimilar, the artworks actually present surprising correlations in terms of materials and methods of execution. In some cases, the insights gained through study of the artist's materials overturn historical assumptions about Manet's pastels on canvas supports and explain the peculiar condition issues that characterize these artworks.

Extensive Conservation Treatment of a Very Oversized Advertising Poster

Tish Brewer

Oversized paper materials present numerous logistical challenges to the conservator, particularly when space is

tight, staff is small, budget is low, and geographical distance is far between treatment location and installation site. Many oversized pieces created for advertising were intended to be ephemeral and were heavily used, on display unprotected for long periods of time, rolled and unrolled frequently, and easily physically damaged.

This presentation will focus on the treatment of a seven by nine-foot Cracker Jack poster from the 1910s, a thin lithograph mounted on linen and stored in a Montana barn for years. Conservation over a 15-month period involved removal of the degraded linen, washing and lining of the poster, and a significant amount of fills and inpainting, as well as a partial secondary lining. There were hurdles at every stage of the process due to the massive size of the piece and its planned method of transport and installation. This talk will address those difficulties, and the details of treating and displaying this unique object.

Developing a New System to Remove Matrix and Clean Fossils from the La Brea Tar Pits

Tania Collas and Chris Stavroudis

The La Brea Tar Pits and Museum are part of the Natural History Museum of Los Angeles County family of museums. In addition to the La Brea Tar Pits Museum, which houses one of the world's largest and most diverse collections of Late Pleistocene fossils, the Rancho La Brea site surrounding the museum contains the only consistently-active urban Ice Age asphalt-seep excavations in the world. The matrix, the material that is excavated, is a combination of tar, sediments, and ice-age fossils ranging in scale from mammoths to insects.

During excavation, matrix is removed from larger fossils mechanically and with locally applied solvent. To retrieve smaller fossils, a section of matrix is placed into a fine mesh sieve and the tar is dissolved and washed out with solvent, leaving the sand and fossils. Volunteers and staff remove small and micro-fossils from the washed sand for characterization and study.

Recently, we decided to re-evaluate our fossil cleaning methods and develop a greener, safer system that would help protect the health and safety of Tar Pits fossil preparators while aligning with the museum's focus on sustainability. We are working in collaboration with Barbara and Edward Kanegsberg*, editors of the book *Handbook for Critical Cleaning*, to formulate a better strategy for both cleaning larger fossils and for separating the sediment and fossils from the matrix. Our goal is to replace the current cleaning protocol with a new, environmentally-friendlier and healthier system that will generate much less waste, allow for solvent re-use, and potentially speed the cleaning process.

*In the critical cleaning community, they are known as "the Cleaning Lady and the Rocket Scientist."

The Conservation-Restoration of Two Human Hair Wigs

Kimberleigh Collins-Peynau

Through a case study format, this paper presents the examination, technical fabrication, and conservation of two human hair wigs belonging to a late 17th-century Holy Child from Spain/Naples (?) and an 18th-century Holy Child from Spain, elements frequently used on Baroque devotional sculptures found in Spain and Italy.

One wig, which sits atop a Holy Child's head held in place by a nail, consists of an iron wire structure on which curled human hair is attached and secured by cotton thread. The other wig consists of a fabric base on which hair is attached by cotton thread. These objects, belonging to the Jacquinet Collection of the Musée d'Art and d'Histoire de Chaumont, were found in an alarming state of conservation. The structure was unstable (breaking hair possibly due in part to the presence of an unknown substance, insect infestation, and rigidity of materials) and the surface was very dirty (dust, insect carcasses, and grime).

Because of the close contact with iron and cotton, the treatment of the hair had to be approached with particular caution in order to avoid introducing water

onto the surface of the iron and cotton. Restoring shape to the curled hairs also proved to be a delicate process. In order to better understand and conserve these objects, further research on fabrication techniques, regional styles, and conservation treatment of human hair would be very beneficial to conservators.

Reinventing a Museum: Celebrating Collections and Rethinking Engagement

Gretchen G. Dietrich

Closed for nineteen months, the Utah Museum of Fine Arts paused to replace the building's vapor barrier to preserve the building's structural integrity and to better maintain environmental controls for the collections. Additionally, HVAC systems were updated, building monitoring systems were improved, and heat trace was added to the windows to mitigate condensation. Consulting first with Michael Henry and Wendy Jessup to inform the University's process around the specific needs of the collections, the University ultimately contracted with Simpson Gumpertz & Heger to design the project.

While closed, the Museum staff worked diligently to ensure the protection of the collections and set about to reinstall and rethink just about everything. The UMFA reopened in August 2017 with new installations and an improved visitor experience, but also with an increased ability to maintain industry-standard environmental controls without further damage to the Museum's beautiful building.

Old School Meets New School: Fundamentals of a Successful Training Partnership

Debra Evans and Anisha Gupta

For over forty years, the paper conservation lab at the Legion of Honor has provided training opportunities for an international group of over sixty conservators. At the same time, these interns and fellows have brought up-to-date conservation information to the resident Legion conservators. This philosophy of mutual education is at the

core of the program's success, as is the idea that success will be greater if there are high expectations from students and mentors.

Important tenets of our program include: Concentrated treatment experience. An internship is the ideal time for focused expansion of treatment skills.

Works conserved should be important. Confidence soars when interns are trusted to work on important objects rather than ones of lesser value in study collections. Connections with staff members. Interns are included in meetings and interactions with curators, registrars, technicians, development staff, etc.

Outreach. Interns are expected to represent conservation in museum forums including tours, lectures, blogs, and social media.

Professional publication and presentation. Interns are encouraged to present at conservation conferences.

Lab legacy. Every intern is required to make a lab improvement that is useful for future lab denizens. This legacy is a way to honor our alumni.

Conservation should be fun. We're not in this for the money.

The two authors represent a training span of close to forty years and will describe the synergy that takes place when old school combines with new school, when new capabilities in analytical, digital, and preventive methodologies merge with long established treatment and connoisseurship skills.

Designing a Museum in an Active Seismic Zone

Sarah B. George

Salt Lake City is one of the most seismically hazardous urban areas in the interior of the United States because of its location along the Wasatch Fault, at the eastern edge of the highly faulted Basin and Range province. Living in an active fault zone requires significant thought about how to protect people and objects when designing a new structure.

The Natural History Museum of Utah's new home, the Rio Tinto Center, was designed to fit into the hillside above the city, using a variety of engineering

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solutions such as soldier piles and shear walls to minimize the potential for collapse in a magnitude 7 or greater earthquake. The architects also used the concept of seismic faulting as inspiration for the form and façade of this beautiful, award-winning building.

Looking Good at 150: The Treatment of the Alaska Treaty of Cession Documents for the Alaska Sesquicentennial

Seth Irwin

In the fall of 2017, to commemorate the 150th anniversary of the purchase of the Alaska territory from Russia, the Alaska State Museum will be putting on an exhibit of the documents that were integral of the purchase of the territory in 1867. This exhibit is the product of a joint effort between the Alaska State Museum, the Alaska State Archive, and the Alaska Historical Library. At the beginning of 2017, the Alaska State Museum brought up paper conservator Seth Irwin to the brand-new paper lab at the new Alaska State Museum, to ‘break in’ the brand-new paper lab and treat the documents. This talk will discuss the background of the exhibit, what was involved in bring the new paper lab to up and running status, and the treatment of the documents for the exhibit.

Psychedelic Solutions: Unconventional Exhibition Displays for Rock Posters and 2D Materials from *The Summer of Love*

Anisha Gupta and Victoria Binder

As museums shift to displaying works on paper in unconventional formats and on a larger scale, conservators are forced to create innovative and possibly untested solutions. This talk will discuss the mounting and installation of over 200 psychedelic rock posters for the exhibition *The Summer of Love Experience* at the de Young Museum. Since the curator and exhibition designer wanted to display the posters unframed, the paper conservation lab strived to come up with a solution that was safe for the objects but also feasible within the time frame and budget. We tested a variety of mounting methods and materials for different concepts, all of which will be outlined.

This exhibition also included the mounting and installation of a 21’ x 10’ billboard that consisted of fourteen individual screenprints. The goal of this project was to create a safe installation and display method for the billboard. This included treatment to stabilize the artwork and preparation to mount the billboard with hinges and magnets, working closely with the carpenters and mountmaker.

Other challenges in this exhibition included determining how to display posters under flashing lights to simulate animation and creating a case that incorporated different material types such as thick illustration boards, printing plates, and acetate sheets and films.

Coming in from the Cold: Considerations for Equipment Selection, Operation, and the Development of Cleaning Parameters for Dry-Ice Blasting

William Hoffman

In the spring of 2013, conservators within The Batten Conservation Complex (BCC) at The Mariners’ Museum and Park (TMMP) in Newport News, Virginia began looking into the application of dry-ice cleaning for the removal of corrosion on wrought iron artifacts recovered from the wreck site of the Civil War Ironclad USS Monitor.

Although the technology had been used in industry for several decades and had started to be researched within the conservation field, detailed information was limited on the types of dry-ice blasting equipment available as well as the operating requirements and limitations of the machinery. Furthermore, research on blasting technique and a developed procedure to identify safe cleaning parameters was also unavailable.

Therefore, conservators at the BCC experimented with several blasting units and compressor systems along with investigating different blasting nozzles and various forms of carbon dioxide (CO₂) media. The results of this experimentation enabled the conservation staff to gain a better understating of the dry-ice blasting process and design a blasting system adequate for its needs.

Once the blasting equipment was identified, a sample testing procedure was developed to determine safe clean parameters using a custom-made testing apparatus coupled with before and after cleaning photographs of sample material using a HYROX microscope.

Successful cleaning test results for corrosion removal on wrought iron led TMMP to seek grant funding to purchase a blasting system. Since April of 2016, dry-ice blasting has been regularly employed within the BCC with additional research being conducted to develop effective cleaning parameters for cast iron and copper alloys.

This presentation will provide an overview of the dry-ice blasting process and give insight into some of the considerations that need to be made when selecting and operating dry-ice blasting equipment. Additionally, a description of the method developed to identify safe cleaning parameters will also be given.

The Growth and Future of Conservation at the University of Washington Libraries

Justin P. Johnson

In 2012, the University of Washington Libraries in Seattle, WA began a project to grow and expand existing conservation capacities beyond the tiny basement facility that had existed for over 40 years, and have during those five years undergone a period of rapid growth and change. Sparked by an Andrew W. Mellon Foundation award to establish a Senior Conservator position, the UW Libraries completed a new 4,000 square foot hybrid conservation facility in April 2016, expanded our educational outreach with the addition of two internships, and successfully raised funds to endow a Senior Conservator position.

In 2017, we received a new Mellon award to support deeper collaborations and shared conservation services between the University of Washington Libraries and the UW campus art museum, the Henry Art Gallery. Since then we have hired a jointly appointed Photograph and Paper Conservator to conserve collections at both the Henry and the Libraries. This presentation will share what we learned

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throughout this process (from lab design to fundraising) and describe some of the challenges and successes we encountered along the way.

Characterization of the Aniline Dyes in the Colored Papers of José Posada's Prints Using Time-of-Flight Secondary Ion Mass Spectrometry to aid in Developing a Treatment Protocol for the Removal of Pressure-sensitive Tapes

Stacey M. Kelly, Jodie Utter, Amy V. Walker PhD, Ashley A. Ellsworth PhD, and Jenny K. Hedlund

Jose Guadalupe Posada (1852-1913) was a prolific and influential Mexican printmaker; he produced thousands of images printed on a variety of poor-quality papers, often colored with vibrant but fugitive aniline dyes. The Amon Carter Museum of American Art has a large collection of approximately 400 prints attributed to Posada, many of which retain their bright color. A number of these are unstable due to oxidized pressure-sensitive tape residue, penetrating and weakening the short-fibered paper. In addition, aniline dyes are sensitive to solvents, complicating treatment.

Because aniline dyes have varying sensitivities to different solvents it is necessary to characterize them before an appropriate treatment protocol can be developed. A previous study of Posada's prints identified several aniline dyes using Fourier Transform (FT)-Raman spectroscopy. Of these, the yellow dyes could not be fully characterized. In this study, time-of-flight secondary ion mass spectrometry (TOF SIMS) was used to discern the dyes present in the colored papers with particular focus on the yellow dyes.

TOF SIMS is a valuable analytical technique for the identification of organic and inorganic components. Its high sensitivity and small sample size requirements make it potentially useful for the analysis of dyes and works on paper. For this study, a selection of Posada's prints in various colors from the Amon Carter's collection were examined using TOF SIMS, producing significant data for all the dyes analyzed.

As part of developing a treatment protocol for the Posada prints, an experiment was set up using artificially aged paper and tapes to simulate the removal of oxidized tape from fragile dyed papers. A variety of methods were employed. Samples were created by applying Scotch Magic™ tape (acetate backing; acrylic adhesive), 3M 2214 paper tape (crepe paper backing; rubber adhesive), gummed brown paper tape (kraft paper backing; starch adhesive), and Slime rubber cement to several c.1900s dyed and undyed broadsides, mimicking the Posada prints.

—The samples were then 'treated' with solvent and suction, rigid Gellan gum with solvent, and solvent through Gore-tex sandwich. The samples were imaged using visible light and Ultra-Violet (UV) light before and after treatment, along with spectrophotometer readings to monitor and record any changes in the samples.

Because aniline dyes are prevalent in many turn of the century objects, as are oxidized tapes, developing an effective treatment protocol has tremendous potential benefit.

Special Collections Exhibits and Opportunities for a Book Conservator

Bill Minter

As conservators, we are called upon to treat items for exhibitions. In some cases, we are the exhibits preparator and we might also be involved with the exhibit design. Fortunately, colleagues in The Eberly Family Special Collections Library at The Pennsylvania State University Libraries (aka Penn State University) have asked for assistance with their recent exhibits. These were great opportunities to expand our use of various materials for exhibit preparation and to also explore collaborations with other university departments.

Perhaps the most interesting project was the preparation of an exhibit of 17th-thru 19th-century toys. One 19th-century book, *Stuwwelpeter*, also known as *Shockheaded Peter* was to be displayed. While static images from the book could have been displayed, the exhibit visitor would miss the impact of pulling on the

tab to experience the resulting image movement in these unique early books. We therefore turned to the University's Center for Quantitative Imaging where a page was examined with x-rays.

The resulting images allowed us to determine the inner workings and the linkages that were used. An oversized digital facsimile was produced and this added to the interest and experience for the visitors. Other unique opportunities for collaboration between conservation and exhibits will be shared, such as the digital facsimiles of World War I glass stereo slides and another on "Flying Folios," as well as others.

Kintsugi-repaired Ceramics in a New England House Museum? Analysis and Western-style Simulation

Colleen O'Shea

A cabinet at the Sleeper-McCann House, a Historic New England property in Gloucester, MA, contained five vessels apparently repaired using the Japanese kintsugi method. Kintsugi is a skilled and valued art of mending ceramics using Asian lacquer and sprinkling the joins with precious metals. The repairs are intentionally visible due to the line of gold or silver along the cracks or flaws in the object. The use of precious metals in repairs is meant to convey that the repaired object has its own beauty. A ceramic may be damaged, but mending it gives it new life, and beauty can still be found in imperfection.

When this technique is used, it imparts additional value to the object, in terms of both aesthetics and history. Two Western museums have recently mounted exhibitions on the topic of kintsugi repairs.¹ Performing a kintsugi repair requires extensive training in the art of lacquer; the process of making the repair is exacting, time-consuming, and difficult.

It is possible to imitate kintsugi with modern materials by using metallic paint, bronze powders, or mica powders in a synthetic binder, which could be achieved by someone without knowledge of lacquer art. A forger could take an old vessel, perhaps already broken, and repair it with synthetic materials that have the

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appearance of kintsugi. The high prestige of kintsugi means that there might be a financial incentive to fake the method.

Other imitations may be done with less-nefarious purposes in mind: it is possible to buy a repair kit called “New Kintsugi Kit” that aims to “combine this lovely old technique with new technology,” so that the modern DIY-er can repair her broken ceramics.²

Because so little was known about the history of these objects, the five ceramics from the Sleeper-McCann House were investigated to better understand their composition, with the ultimate goal being the assessment of whether or not they have true kintsugi repairs. They were examined under ultraviolet radiation as a preliminary step in order to detect differences in materials.

Following this, conservation scientists Drs. Rebecca Ploeger and Aaron Shugar of SUNY Buffalo State analyzed the objects with x-ray fluorescence spectroscopy and Fourier-transform infrared spectroscopy. Finally, samples from break areas on two of the objects were removed and then mounted into cross sections in order to help discern the layering structure of the repairs. In all five cases, the repairs were found to be consistent with the materials and methods used in kintsugi.

A concomitant study was conducted in order to find a way to simulate kintsugi repairs using conservation-grade materials, in the case that conservation of a previously kintsugi-repaired vessel is needed. Broken stoneware ceramics belonging to the author were repaired with several different techniques in order to gauge the best way to imitate true kintsugi.

1. “Golden Seams: the Japanese Art of Mending Ceramics,” Smithsonian Freer Gallery of Art, November 8, 2008-November 29, 2009; “The Aesthetics of Mended Japanese Ceramics,” Johnson Museum of Art, Cornell University, June 28-August 10, 2008, and Museum für Lackkunst, Münster, Germany, September 9-October 12, 2008.

2. Humade, <http://humade.nl/products/new-kintsugi-1>.

Investigating Liquid CO₂ to Clean Textiles and Basketry

Nancy Odegaard

This presentation illustrates the use of micron-sized snow particles to transfer and displace particles of surface soiling on delicate textile and basketry surfaces. Liquid CO₂ from a tank (with syphon) connected to a valve and a nozzle expands without exchanging heat, thus becoming a mixture of gaseous CO₂ and dry ice that surrounds the soil particles with a gas envelope which slides over the object surface, and then the CO₂ volatilizes into the air. This momentum transfer and displacement system is dry, non-conductive, nonabrasive, and non-toxic. Our process of testing this technique is described.

Woman-Ochre, A Stolen de Kooning Painting Comes Home.

Nancy Odegaard

On Nov. 29, 1985, a Willem de Kooning painting, *Woman-Ochre*, was stolen from the University of Arizona Museum of Art. Decades later, on August 3, 2017, a routine Thursday afternoon at the University of Arizona Museum of Art, staffers were preparing for next season’s exhibitions when the phone rang. Arrangements for its quick return to Tucson from Silver City, New Mexico followed. The painting was unpacked and examined the following Wednesday. The nature of the theft, the discovery, the return, and the preliminary examination for authentication provide an interesting story that highlights the importance of a conservator.

On the Closure of Tears Using 3M Command Adhesive Strips

Steven Prins

A system of traction for the closure of torn paintings based on 3M Command Adhesive Strips is to be presented. Developed over the past five years in the painting conservation studio of Steven Prins & Company, this technology presents a number of desirable characteristics that have made it the default methodology for closure of tears in the author’s studio; in particular: low tech, low impact, low risk, readily

deployed and removed, flexible and easy to work with. While developed for use in the repair of paintings the technology might have applications in others of specialization.

The Playhouse at Shangri La: A Case Study in Re-integration Using an Alternative Material

Kent Severson

This presentation will explore the reintegration of the mosaic tile façade of the Playhouse (poolside guest house) at Shangri La, Doris Duke’s Hawai’i home (now a center for the study of Islamic arts and cultures), using materials dramatically different from the original. The original cut tile mosaics, commissioned in Iran in 1938, were executed using traditional materials and techniques, including a gypsum-rich mortar backing.

The tiles were installed in 1940 atop a steep sea wall above constantly breaking surf and exposed to harsh sun and salt-laden wind. By the late 1970s some sections of the decoration had deteriorated to the point of collapse. After numerous failed attempts at stabilization, the decision was made to de-install and replace approximately 30% of the tiles with a more durable facsimile.

The decision-making process that led to the removal and replacement of this portion of the decoration was not taken lightly and was dominated by the structure’s location above the rocky edge of the tropical Pacific Ocean. “In kind” replacement was explored and samples were procured from Iran, where cut tile mosaics are still manufactured; however, the results were not entirely satisfactory and it was feared that the same kind of deterioration would only happen again.

The search for a suitable replacement material eventually led to the replication of the crisp, brilliant appearance of the original mosaic in glazed porcelain. Using a combination of careful measurements and high-resolution digital photography, a full-sized, distortion-free photographic image was generated. To avoid imposing a grid on the composition by printing on square stock porcelain, the full-

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sized image was separated into smaller individual shapes along the lines of the pattern and the stock tiles were cut using a water jet into unique, jigsaw puzzle-like pieces. The individual pieces were then digitally separated into color layers which could be used to generate masks and stencils for application of the custom formulated glazes.

Each tile was fired individually for each color, up to as many as six times. The resulting tiles effectively replicate the overall effect of the original cut tile mosaic at a short distance, but are easily distinguished from the original on close inspection, but in a material with a good track record in a harsh, sun-struck marine environment.

Cold Never Bothered Us Anyway - An Arctic Conservation Adventure

Hays Shoop and Yasuko Ogino

In November of 2015 we were contracted to travel on-site to Barrow, Alaska (some 300 miles above the Arctic Circle) to treat a large oil painting on canvas, and to examine and prepare treatment proposals and cost estimates for the other five paintings in the collection of the Inupiat Heritage Center (IHC). The project occurred during the week in which the sun ceased rising above the horizon and the temperatures were in the minus 20-30F range.

The treatment of the large painting went well and as planned, though issues arose with the use of a relatively non-toxic solvent (EtOH) in the building, and a staffer's extreme allergies. The intent was that the easel paintings would be shipped to Denver for treatment where we would have the full complement of equipment and supplies.

When IHC received funding to treat the five paintings in 2017 we began to advise the collections manager on properly packing and shipping them, only to find that the cost of transit insurance to fly the paintings out of Barrow (no road access) would sink the project. We ultimately agreed to undertake some extensive treatments on-site (including infusing and lining a large painting), in a figure-it-out-as-you-go manner, during the opposite season when it was daylight

around the clock and the temperatures soared to the 20 above zero range!

Putting the Wiki Platform to Work: Sharing Material Testing Results

Samantha Springer

Andrew W. Oddy first introduced an accelerated corrosion test used for evaluating exhibition case materials at the British Museum in 1973. The "Oddy Test," as it has come to be known, continues to be used by museums as the primary litmus test for materials used in the display of artwork and cultural heritage materials. Several variations and improvements have been published since and almost every institution has their preferred method based on the equipment available to them. Although conservators continue to use the test and informally share results, there has been historical resistance to publicizing them.

One of the primary issues with publishing results is fear of manufacturer backlash or alternatively being held responsible for damage caused through use of an "approved" material. In addition, variations in Oddy testing protocol prevent the standardization of results. Finally, the accelerated corrosion test is only one of various methods of evaluation and results may be quickly voided by unannounced product manufacturing changes.

It seems particularly pertinent approaching the forty-fifth anniversary of Andrew Oddy's initial publication that we address the topic of materials testing and sharing results, especially in light of the fact that the British Museum has published their results dating from 2009-2014 on their website. In 2012 conservators created a platform for others to do the same on the American Institute for Conservation (AIC) Wiki site.

It was established with the hope that colleagues would feel more comfortable sharing information on a collaborative platform, giving them safety in numbers. By establishing best practices for sharing results on the AIC Wiki, such as describing the testing protocol and imaging test coupons, the databases allow conservators to evaluate others'

results for themselves. This initiative began at the request of AIC's Research & Technical Studies (RATS) Specialty Group, and in 2011 the J. Paul Getty Museum (JPGM) contributed the initial content to the newly established Materials Testing page.

This included a general explanation of Oddy testing, a description of their testing protocol, and a list of adhesives and tapes tested by the Getty Conservation Institute in 2000. Around 2011, the Cleveland Museum of Art's renovation campaign prompted the authors, who were asked to test materials to build an internal reference library, to perform a review of their own Oddy testing protocols. The review included comparing protocols at other institutions, including information available on the AIC Wiki.

In January of 2012, after a call for Wiki contributions from AIC e-Editor Rachael Perkins Arenstein, the authors, along with objects conservator Elizabeth Homberger (now at LACMA), volunteered to create a materials database on the Wiki.

The project expanded the Oddy testing page, creating a searchable and sortable table of tested materials. In addition, any contributor who shared their protocol could easily add their results to the table. By publishing the results on a neutral site, such as the AIC Wiki, it is the authors' hope that other institutions will see the benefit of such a resource and begin to participate in greater numbers. Most recently, the National Archives of Australia with PAT results and Autry National Center with a testing protocol joined the group of those sharing information.

The existing content consists of a Protocols page and four Materials Database pages divided into the following categories: Fabrics, Case Construction Materials (including storage and mount materials), Adhesives and Tapes, and Paints and Sealants. Links to manufacturer and supplier sites, related external sites, other published results, and pertinent literature are also provided.

Each page contains the important caveat that this information is a reference tool rather than endorsement. The database pages can easily be expanded or adapted

based on contributor or user feedback. Recent feedback was solicited from the online mountmakers' forum and then incorporated into the site. Current goals of the project include increasing the number of contributors, automating data entry, and integrating feedback from users. The ultimate goal is to create a resource that will aid staff at institutions of every size and type in choosing materials appropriate for their needs and collections.

When Is the Big One Coming? Securing Museum Artifacts for Storage and Display in an Earthquake Zone.

Bill Thomas

A close-up look at collections storage systems, storage mounts, and various ways of mounting and securing exhibit objects in visitor galleries, as done at the Natural History Museum of Utah. We will focus specifically on the extra measures that are required to keep things safe and secure in a seismically active area like Salt Lake City.

Case Study: The Structural Conservation of a Painting Affected by Metal Soaps Formation

Jia-sun Tsang

Robbing the Eagle's Nest was painted in 1856 by Robert S. Duncanson (1821-1872), an African-American painter. The painting is from the collection of National Museum of African American History and Culture (NMAAHC) acquired in 2009. This striking landscape, infused with dramatic imaginary scenery, has been attributed to Cincinnati, Ohio.

The canvas was severely distorted and had craquelure on the entire painting surface. Extensive translucent protrusions covered the entire painting and the tacking edges. These protrusions have a white transparent appearance and are sensitive to water and solvent.

Non-destructive analysis was completed with XRF, XRF mapping, and minimum sampling of the protrusion was taken for FTIR and XRD analysis. Initial investigation indicated the zinc was isolated in the soap aggregates suggesting advanced migration of the zinc soap. A

dry paint sample preparation method was developed to preserve the integrity of the soap within the paint cross-section with diamond paste polishing. No solvent or water was used in the polishing. The embedded samples were studied further with microscope and instrumental analysis with SEM, SEM-EDS mapping, SEM-CL, and single point EDS. After a long and thorough study, the small white transparent bumps were identified and confirmed as zinc soap.

Since the zinc soap aggregates break off easily and are sensitive to water and solvents, traditional methods of correcting the planar distortion involving heat, moisture, and pressure would destroy the zinc soap aggregates. In order to flatten this 150-year-old painting, the conservation team started to search for an alternative treatment without using heat, moisture, and pressure.

An innovative metal stretcher system was designed to tighten the slacked painting and minimize the distortion. A new stretcher, TWP2 was invented. This stretcher is made of sturdy aluminum, and the tension adjustment is achieved by moving the stretcher bars in each direction independently by turning thumbscrews positioned along the stretcher bars.

This newly designed stretcher was fitted as an insert into the original *Robbing the Eagle's Nest* stretcher and the severe planar distortion of the canvas was corrected instantly. The finer prominent age cracks are still visible as expected. However, the painting regained the aesthetic intent and without disrupting the integrity of the zinc soap. The painting is currently displayed at the Visual Art Gallery of the NMAAHC.

The Challenge of Paper Engineering: Conserving 'The Map that Changed the World,' William Smith's 1815 Geological Strata of Great Britain

Karen Zukor

A talk and film on the repair of Smith's twelve-foot long, hand-colored engraved map, which expanded the field of geology and whose importance was celebrated on its 200th anniversary in 2015.