

President's Letter

Samantha Springer

Dear WAAC Members,

It is my pleasure to write the last newsletter of the year. I will be your last guest writer before our incoming president, Sue Ann Chui, takes over in January.

As an outgoing member-at-large, or MAL as we are often called, I want to share my experience with you as a part of this welcoming group. I am a recent transplant to the Northwest, and one of the first things that I looked forward to doing after moving to Portland three years ago was attending a WAAC meeting. Almost immediately I was encouraged by previous MALs and presidents to not just attend a meeting, but to run for an office as a way of getting involved, meeting other

conservators from the region, and really getting a feel for how things are done in less densely populated areas. Something in the way they talked about the board, how WAAC is run and comes together as an organization inspired me to take the leap and get involved.

I will forever be grateful that I joined the WAAC family. Doing so has given me a greater respect for how the organization works and has continued for 44 years. Not only has this experience allowed me to make professional connections, but personal ones as well. As someone who has primarily worked in the Midwest and lived on the East Coast, being a part of WAAC helped me to get to know the institutions and people of the Western region. These are the people that I go to when I have an obscure question, need to brainstorm, need a local source for a material I just ran out of, or someone to help out at the last minute. Everything they say about WAAC meetings is true- they are more fun, more casual, and they inspire heated conversation and dialogue. Once you've served on the board it seems to get into your system. At every meeting I see previous members pitching in to make the meeting run smoothly.

Annual Board and Business Meeting

During the annual meeting, the board meets to review a number of business items which are then announced at the business meeting to the members. There is more detail about some of these items throughout the newsletter, so don't think this is all you will hear about them. First off, the election results. Congrats to Anne Getts and Jacinta Johnson who will be your two new MALs. They will serve alongside Tish Brewer and Rowan Geiger, the current MALs going into their second year. Jennifer McGlinchey Sexton and I will be rotating off the board. A big congrats to Tricia O'Regan at the Fine Arts Museum of San Francisco who is the new Vice President and has already started narrowing down meeting locations for 2020! We also thank all those who ran, but did not get elected. Your enthusiasm is appreciated, and we hope that you will consider running again in the future.

This is not a change, but you should all know that Sue Ann will finally move from acting president into her role as president planning the **45th annual meeting at the Getty**. The meeting's dates are set for **November 6 - 8th, 2019**, so mark them on your calendar! To facilitate the planning Michelle Sullivan, assistant paper conservator at the J. Paul Getty Museum, has taken on the role as secretary. WAAC thanks Denise Migdail for her service as secretary over the past five years.

As an organization we continue to be cautious about our membership numbers. We learned that while our membership was up slightly at the time of the meeting due to the unique location of Ghost Ranch which drew many new members, membership renewal has dropped. That being said, if you are reading this you are a dues paying member, so I don't need to convince you to become a member or to renew your membership. So instead I'll ask you to please remind your colleagues to renew their membership to WAAC to keep this organization going. Put a reminder on your calendar, whatever you need to do. Without our members we can't maintain the great meetings or this newsletter. Just a reminder, \$5 of your membership dues goes to CoOL, and WAAC is one of the few memberships that is dedicated to sending out a print publication. Related to this, the board voted to increase dues by two dollars next year to cover increases in postage.

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President's letter, continued

A topic of much discussion from last year was the website. Since then Walter Henry has retired as our web editor. We wish Walter well in his retirement and thank him for all that he has done for our organization. He has been developing the WAAC website on CoOL since the beginning, and it feels that no amount of thanks can be enough. Fortunately Justin Johnson has stepped up and will take on this role moving forward. To facilitate this transition and the development of a new website the board has created a new non-voting position, Webmaster. Jennifer McGlinchey Sexton has graciously volunteered to take on this role.

Annual Meeting

This year's meeting was opened by Lesley Poling-Kempes, an award winning author, who set the stage for all of us at Ghost Ranch by providing historical context about the location. She told the tale of four remarkable women who came to the Southwest in the early 1900s, one of whom was Carol Bishop Stanley, the founder of Ghost Ranch. It was a strong reminder about the importance of history, research, and uncovering untold stories. Later that morning Jean Portell further connected the dots to Georgia O'Keeffe and Carolyn Keck who were also both connected to Ghost Ranch. There were many other wonderful talks and discussions competing with the beautifully unique location over the following two and a half days. Some attendees were able to eke out time for hikes in the nearby cliffs and landscapes that many of us are familiar with from Georgia O'Keeffe's paintings. My personal highlight was getting to the Georgia O'Keeffe house and studio during the reception as it has been on my bucket list for a long time. A special thanks to Dale Kronkright and the staff at the museum for making that possible.

There are many people to thank in pulling this meeting together. Sue Ann Chui did an amazing job stepping in as acting president to help organize the local arrangements committee. This meeting would not have happened without the willpower and determination of the Santa Fe conservation community. A huge thank you goes out to them: Susan Barger, Rae Beaubien, Jo Anne Martinez Kilgore, Dale Kronkright, Patricia Morris, Steven Prins, Bettina Raphael, David Rasch, Maureen Russell, and Landis Smith. The board members helped to cull papers, recruit nominees for the election, and organize the auction. The auction, by the way, brought in a ground-breaking amount, over twice any previous auction.

We had a number of supporters from the conservation and arts community who supported the meeting, the reception, the Angels project, as well as the auction. Thank you to Tru Vue, FAIC, Gamblin, Golden, Bostick Sullivan, Displays Fine Art Services, and Artisan Materials Expo. It was wonderful to see many local supporters as well supporting the keynote speaker, Angels project, and reception. These supporters were: New Mexico Humanities Council, Ghost Ranch, Georgia O'Keeffe Museum, Gruet, and Abiquiu Inn.

The Angels project took place on the day before the meeting started. It was organized by Susan Barger with Gretchen Gürtler from the Mesalands Community College's Dinosaur Museum and Natural Sciences Laboratory in Tucumcari, NM and assisted by Axel Hungerbeuhler also from the Mesalands Museum. Thanks to all of the Angels: Rae Beaubien, Tish Brewer, Sue Ann Chui, Geneva Griswold, Julie Parker, Laura Pate and her mother, Marta Pinto-Llorca, Linnaea Saunders, Steven Scisenti, Scott Simkins, Brian Simmons, and Emiline Twitchell. They were split into two groups, but when the materials at the Florence Hawley Ellis Museum of Anthropology were rehoused earlier than planned everyone pitched in to work on rehousing the delicate dinosaur bones at the Ruth Hall Museum of Paleontology. The project was supported by a grant from FAIC as well Ghost Ranch.

It is bittersweet to be writing this letter as I say goodbye to my duties as a member-at-large. I will miss the buzz of communication in my inbox, but I know that opportunities await in the future. I hope this is just the beginning of a long relationship with WAAC.

With hopes of seeing you at next year's meeting,

Samantha

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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) <http://cool.conservation-us.org/waac/>.

Deadline

Contributions for the January *Newsletter* should be received by the Editor before **August 15, 2018**.

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.

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Sue Ann Chui

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Individual Membership in WAAC costs \$40 per year (\$45 Canada, \$50 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 \$45 per year (\$50 Canada, \$55 overseas) and entitles the institution to receive the WAAC Newsletter and Membership Directory. For membership or subscription, contact: Denise Migdail secretary@waac-us.org

Website and Silent Auction News

The WAAC website first appeared on CoOl in July, 1993. We were, according to Walter Henry, the first conservation organization to join. While the website has remained fairly functional over the years, there have been glitches, both technical and human, and it is time for an update.

Therefore, the board has for the last year been discussing changing and upgrading the site. And now, we can report progress. As of the board meeting at Ghost Ranch, our beloved web editor Walter is finally being allowed to retire. His replacement is Justin Johnson, conservator at the University of Washington Libraries. We also created the position of Webmaster to act as liaison between members, board, and Justin. Jennifer McKlinchey Sexton, outgoing MAL has agreed to take on the job.

We anticipate the new website will appear in about a year's time.

We had an almost ridiculously successful **Silent Auction** this year at Ghost Ranch. **\$1906 !!!!** at final tally.

It was due, of course, to the imagination and generosity of the numerous donors of items, which included beautiful art, hot conservation items from the usual suspects, Getty books, and two tables of fabulous random items, useful and frivolous.

Thank you to all. As WAAC operates on the tiniest of budgets, the extra cash is always welcome.

Robert Feller



(a fan of WAAC and the *Newsletter*, he was awarded lifetime membership in 2012.)

Regional News

Alaska

Helen Alten is working on grants to fund collections care activities this winter and next year. Thanks to a Museums Alaska Collections Management grant, high definition security cameras with zoom capabilities and long-term record retention were installed at the museum entrances and exhibits. More are being installed during the coming months. The Rasmuson Foundation and Haines Borough each provided funds for technology upgrades to improve digital collection care and longevity, including a new solid-state server with significantly enlarged storage capacity, that will be installed in October.

Intern **Hina Zaidi** from Texas Tech University's Museum Sciences and Heritage Management masters program will be arriving in January for a six-month internship that includes, among other activities, flattening rolled maps and creating improved storage housing for collections.

Ellen Carrlee attended the first convening of a Mellon-funded consortium for conservation science based in the chemistry lab of Dr. Tami Lasseter Clare at Portland State University. Other conservators attending included: **Samantha Springer** and **Karen Bishop** of the Portland Art Museum, **Justin Johnson** of the University of Washington Libraries, **Chris White** of the University of Oregon's Jordan Schnitzer Museum of Art, and **Geneva Griswold** of the Seattle Art Museum.

The Alaska State Museum's project with the consortium seeks to analyze and identify dyes in Chilkat weavings. The ASM has held four monthly meetings of the Chilkat Dye Working Group which has 13 Chilkat weavers participating so far. The Alaska State Museum is also facilitating a loan of artifacts between the University of Pennsylvania Museum and the T'akdeintaan clan until the construction of a museum/cultural center in Hoonah is completed. The clan will check out the objects for ceremonial use as needed.

Nicole Peters recently returned from a second trip to the Dick Proenneke cabin site at Lake Clark National Park & Preserve (LACL) where she finished the on-site condition assessment and photographic documentation of objects housed inside and

around the cabin complex. While on site, Nicole conducted a lecture and workshop on proper housekeeping and surface cleaning techniques for NPS personnel and Proenneke cabin site stewards. She also completed a collection condition survey for the wooden artifacts contained at LACL headquarters in Port Alsworth, including Libby's No. 23 Bristol Bay double-ender sailboat and a traditional Dena'ina food cache and fish-drying rack.

Nicole has completed conservation projects for the Juneau Douglas City Museum, Sealaska Heritage Institute, and Sitka National Historical Park this summer, and has completed private work for local clients that included the repair of a small Nunivak ivory mask. This coming fall, Nicole will be working on conservation projects for LACL at the NPS Alaska Region Curatorial Center in Anchorage and will be consulting for the Skagway Traditional Council on their collections and exhibit space.

Monica Shah and **Sarah Owens** will have another busy fall with a lot of deinstallation and installation of exhibits. Sarah has been preparing objects for display in the upcoming exhibits including *Aviq and Nanuq: Sea Horse and Sea Bear of the Arctic Ice*, that opened on 5th October. This exhibition explores the ways the iconic animals, walrus and polar bear, offer important insight into the culture of the North and its complex future.

Sarah gave a full day workshop on textile conservation during the Museums Alaska conference from 11th - 15th September in Nome. It was her first trip to Nome so she was particularly looking forward to experiencing another part of Alaska and connecting to other museum professionals working across the state.

Monica has been organizing and conserving a large loan to the Rovaniemi Art Museum in Finland. The exhibition will share the art and cultural heritage of Alaska with other northern nations in 2018-2019. This cultural exchange will include bringing indigenous artists to Finland, to build on the collaborations that the Anchorage Museum has accomplished in recent years. Indigenous artists and museum professionals from other Arctic countries will convene for the annual Northern Art Network meetings to meet about future collaborations.

In early August, Monica represented the museum at a gathering of professionals to help advise and guide a new cultural center in Quinhagak, a village near Bethel, Alaska. The cultural center is housing over 60,000 artifacts from one house site, one of the largest excavations in Yup'ik lands. The entire project is an excellent example of community driven archaeology, curation, and research. The week of festivities included artist workshops, where community members could learn to sew sealskin, carve ivory, carve masks, dance with elders and contemporary internationally known Yup'ik dancers, and learn about their ancestors. It was an inspiring and emotional event.

Regional Reporter
Ellen Carrlee

Arizona

News from the ASU Art Museum conservation department treatment includes disassembly, cleaning, consolidation, and loss compensation of two life-size figures by ceramic artist Viola Frey with the help of fellow conservators **Nancy Odegaard** and **Marilen Pool** from Tucson & the University of Arizona and a team of dedicated volunteers. The sculptures will be on display at the ASU Art Museum along with other iconic works by the artist from September 1, 2018 - March 23, 2019.

Marilen Pool continues work on the archaeological perishables at the ASM. Through her private practice she is consulting with the Himdag Ki Cultural Center & Museum on collection management, working on a collection of baskets for the Tucson Museum of Art, and will be conserving some sculpture for the ASU Museum of Art in the coming months. She also resumes classes this fall for her PhD program at the U of A.

The Arizona State Museum conservators completed Pottery Blitz 2018. This time the lab completed conservation for about 80 pottery vessels from the American Southwest in five weeks. Summer interns, alumni, and volunteers in the project that worked with Nancy Odegaard and **Gina Watkinson** included: **Annabelle**

Fichtner, Sophie Church, Susie Moreno, Anthony Sweesy, Leah Bright, Skyler Jenkins, Christina Bisulca, Marilen Pool, Sue Thickett, Catherine Cooper, Wendy Lindsey, Josephine Lai, and Mike Jacobs. The ASM lab team also helped the San Xavier del Bac Mission on the Tohono O'odham Reservation with gentle cleaning of over 150 museum objects scheduled for reinstallation in their museum.

Nancy made several presentations at the AIC annual meeting in Houston. In July she was invited to teach two intensive spot testing workshops for Israeli conservators. The workshops were held at Shenkar College of Engineering, Design, and Art in Tel Aviv in cooperation with the Israel Society for the Conservation and Preservation of Cultural Property and the Israeli Antiquities Authority. She also presented a public lecture on preserving human heritage, and the conservator's role in repatriation in Tel Aviv.

Gina Watkinson was recently selected and awarded NSF funding to participating in the Gordon Research Conference (GRC) - Scientific Methods in Cultural Heritage Research in Barcelona Spain. Conservation scientists gave overviews of the status of conservation science and of the growing impact of data science and artificial intelligence on cultural heritage research and applications. Gina was also elected as co-coordinator of the AIC Archaeological Discussion Group.

Teresa Moreno has taken a new position at head of operations at the Arizona State Museum.

In October 2018, the ASM conservation lab will host a workshop sponsored by NCPTT on best practices for 3D imaging.

The conservation team at the Western Archeological and Conservation Center has had a busy summer traveling to multiple parks for object surveys and preparing objects for exhibit for Little Bighorn Battlefield, Chiricauha, and Fort Larned.

Regional Reporter
Dana Senge

Hawaii

On July 9, 2018, two conservators from McKay Lodge Art Conservation Laboratory Inc. of Oberlin, Ohio, came to Honolulu Museum of Art to deinstall, clean, and reinstall George Rickey's sculpture *Two Rectangles Excentric*. The large stainless steel kinetic sculpture stood in front of Honolulu Museum of Art for several years while on loan from the Prince Kuhio Federal Building. **James Gwinner**, conservator of modern sculpture and public art, and **Christina Simms**, conservator of sculpture and objects managed the project for the GSA along with conservation treatment of the Peter Voulkos sculpture on the mauka side of the building.

In May, an exhibit from the the Museum of Modern and Contemporary Art titled *School of Nice, from Pop Art to Happenings* came to Hong Kong with 51 artworks (several by Yves Klein) which required condition reports upon arrival and departure back to France as a well a treatment from travel damage which kept **Dawne Steele Pullman** very busy. Coincidentally, she happened to also be working in June on artworks of the same period by Japanese artists: Matsutani, Motonaga, and Shiraga.

She recently finished treating two Matisse paintings and three by John Russell in preparation for travel to the National Gallery in Sydney, Australia. Russell was a friend of Matisse (and other French Impressionists) and influenced Matisse's style greatly. She learned that they often depicted the same seascapes while painting side by side en plein air in Brittany.

At the end of April, Shangri La welcomed the latest addition to the museum team, **Kristin Remington**, the new digital assets and collections manager. Work on the Playhouse tiles finally came to a successful conclusion in the middle of May. Since then, **Kent Severson** has been working with two suites of Qajar tiles that formerly graced the gate to the Mughal Garden. The much-repaired and badly installed tiles were taken down in 2008 and have been languishing in storage ever since.

Kent is getting ready for another trip to Iraq in September to participate in another training session with **Jessie Johnson** (Smithsonian) at the Iraqi

Institute for Conservation of Antiquities and Heritage. The current project is aimed at training Iraqi museum staffers in recovery of sculptures and stabilization of the archaeological site of Nimrud, brutally destroyed by ISIS in 2015. Meanwhile, Shangri La had the opportunity to practice their emergency preparedness plans with the near passing of hurricane Lane. Everyone was relieved that the storm failed to impact Honolulu, and the real-life drill was valuable for evaluating how long and how many hands are needed to execute full shut down in advance of a dangerous storm.

The Honolulu Museum of Art is having a new show, *Ho'oulu Hawai'i: The King Kalakaua Era* opening on September 13, 2018 running to January 27, 2019. For the show **Rie** and **Larry Pace** are finishing up a major conservation treatment of a large mid-19th century 3/4-length portrait of Levi Ha'alealea (1822 – 1864), a high chief of the Kingdom of Hawaii.

Regional Reporter
D. Thor Minnick

Los Angeles

LACMA paintings conservators were busy over the summer. **Joe Fronck** completed technical entries for *Gifts of European Art from the Ahmanson Foundation*. The catalog provides essential facts about the important paintings given to LACMA by the Ahmanson Foundation.

In August, Ahmanson assistant paintings conservator **Kamila Korbela-Dunigan** completed a three-year position at LACMA generously funded by The Ahmanson Foundation. During her time at LACMA Kamila assisted in gathering information for the Ahmanson catalog entries. Kamila also researched paintings by Frank Stella and his use of fluorescent paints. The research will be featured in an upcoming LACMA blog post.

Miranda Dunn completed the restoration of two landscapes by Camille Pissarro, *Snowy Landscape at South Norwood* and *The Path to Les Pouilleux, Pontoise*. Miranda is also examining Louis-Edouard Dubufe's 1870 *Portrait of Princess*

Regional News, continued

Branaccio-Massimo for treatment. **Elma O'Donoghue** began the examination and treatment of Jacob Adriaensz Backer's 1638 *Portrait of a Young Woman*, in preparation for loan to the National Gallery of Canada and the Städelches Galerie for their 2020 exhibition, *Becoming Rembrandt: Creativity and Competition in Amsterdam*. The portrait has some interesting pentimenti that will be studied, and the painting will also be cleaned.

Magdalena Solano, pre-program volunteer in LACMA textile conservation, and the Los Angeles regional liaison for Emerging Conservation Professionals Network (ECPN), hosted the very first annual "Los Angeles Portfolio Day" this past August. Held in LACMA's Conservation Center, with assistance from LACMA's project textile conservator, **Laleña Vellanoweth**, several current students and recent graduates of major conservation programs gathered to share their pre-program portfolios and interview experiences to an eager audience of 20 conservation hopefuls. Presenters included **Rio Lopez** (Buffalo 1st year), **Nicole Alvarado** (Buffalo 2nd year), **Jessica Chasen** (Winterthur '17), and **Julia Commander** (Winterthur '17).

On September 12th, **Madison Brockman** joined the Conservation Center at LACMA as a third year intern from the Winterthur graduate art conservation program. Madison had considerable pre-program experience having worked at UC Berkeley's Phoebe Hearst Museum, Zukor Art Conservation, UCLA's Fowler Museum, and the Academy of Motion Picture Arts and Sciences, prior to starting graduate school at Winterthur/University of Delaware in 2016 majoring in paper conservation with a minor in library and archive materials. She interned at UCLA Library the summer after her first year of graduate school, and recently completed a summer internship at the Legion of Honor in San Francisco. Madison is looking forward to returning home to Los Angeles and its welcoming conservation community.

Joanne Harris will also join the Conservation Center as the most recent hire. She will be working with the objects, textiles and painting studios as a conservation technician bringing a diverse set of skills from 10 years at the Autry Museum the as a preparator on a special

projects and for the Getty Villa and Center and the Broad and Hammer museums.

RLA Conservation, Inc. would like to share the very sad news that COO and longstanding professional business manager **Laura Telford** passed away in June. Laura had previously served as the office manager for Sculpture Conservation Studio and worked with RLA from 2015-2018. She was committed to the field of conservation and will be sorely missed. We also welcome to our studio conservator and AIC Professional Associate **David Espinosa**. David holds a MSc in Historic Preservation from the University of Oregon and is a specialist in masonry and outdoor sculpture. Previously David worked with Lorton Stone, LLC and with Conservation Solutions, Inc. on prominent projects such as the US Capitol Building, the Washington Monument, and Arlington Cemetery.

The conservation department at the Margaret Herrick Library of the Academy of Motion Picture Arts and Sciences, has a new pre-program intern joining the team, **Emma Guerard**. Emma will be joining us part-time and working on various treatment projects at both of our locations. **Dawn Jaros**, **Caitlin Jenkins**, and **Courtney Azzara** are thrilled to have her join the department and are very much looking forward to providing Emma with a great conservation experience while working with the unique special collections at the library.

The antiquities conservation department at the Getty Villa welcomes their 2018-19 intern **Katarzyna (Kate) Kowalska**. Kate is a graduate from the Academy of Fine Arts in Warsaw, Poland and started at the Villa on September 10th. Kate has a dynamic background having worked in the Middle East and Ukraine. She has been involved in projects such as: "Saving the Christian Heritage in Lebanon," the conservation and restoration of wall paintings in Lebanon; field work at the archaeological site of Paphos Agora in Cyprus; and has created models of architectural elements from Palmyra, Syria for special exhibitions.

In September, the J. Paul Getty Museum welcomes **Ulrich Birkmaier** as the new senior conservator of paintings. **Sabine Bendfeldt** from the Gemäldegalerie Alte Meister Dresden also started as a guest conservator in the department where she will be studying and treating two predella

paintings from Dresden by Ercole de' Roberti with **Sue Ann Chui** through December.

Sue Ann taught an introduction to varnish removal in the first Andrew W. Mellon Opportunity for Diversity in Conservation workshop which took place in July in the UCLA/Getty conservation labs at the Getty Villa. In late August, **Kat Harada** finished her graduate internship a few weeks early, so that she could start a new adventure at the Mauritshuis in The Hague under a Fulbright-American Friends of the Mauritshuis Grant.

At the Natural History Museum of Los Angeles County, **Marina Gibbons** is treating and preparing a display form for the Peter Pan costume worn by actress Betty Bronson in the original 1924 silent film version of the play by J.M. Barrie. The costume, along with Peter Pan's miraculously preserved silk chiffon shadow, will be on view in the museum's *Becoming Los Angeles* exhibition from mid-November 2018 until mid-May 2019.

Earlier in August, **Tania Collas** oversaw the installation of two exceptionally large feldspar and quartz specimens, weighing an estimated 7000 and 5000 pounds respectively, at the Los Angeles County Fairplex in Pomona. These rare specimens were on display at the fair through September 23, 2018.

The UCLA Library is happy to welcome pre-program conservation assistant **Allison K. Donnelly** into the department for a six-month stint. She has been working on complex circulating bound materials and on a rare 18th-century German newspaper that needed to be removed from a damaging commercial library binding, treated for extensive paper damage in the folds, and placed in a protective enclosure for transfer to Special Collections. Allison has experience at a few other library conservation labs, and it's been great to have her here at UCLA.

Hannah Moshier has expanded her registrar responsibilities, and we are happy to be using "Notability" on a department iPad now for condition reporting. She has also been kept very busy with a complex loan to the Met for an upcoming show on the arts of Armenia. **Wil Lin** has introduced the library to the benefits of the Colibri

Regional News, continued

system of archival quality plastic book jackets for items where the dust jacket needs to be retained. We are also using material for red-rotted leather bindings in circulation.

Allie Whalen, Yasmin Dessem, and Dawn Aveline have all been working in Cuba in an Arcadia funded project “International Digital Ephemera.” They have been teaching teams of folks to digitize endangered materials, both electronic and paper-based. The digital files will be hosted by UCLA Library.

Chela Metzger has been completing research with two other authors on the topic of German influenced bookbinding on Anabaptist devotional titles in American collections. The essay will be out in the news *Suave Mechanicals: Essays in Bookbinding History* edited by Julia Miller and published by Legacy Press. She was honored to receive the AIC Caroline and Sheldon Keck Award for Teaching and Mentoring at the AIC annual meeting in Houston. Finally, the preservation team won the Library’s annual trivia night contest! Special kudos to **Leo Gonzalez**, preservation assistant, for his incredible trivia night.

Regional Reporter
Virginia Rasmussen

New Mexico

The Local Arrangements Committee for the annual meeting held monthly meetings in preparation for the meeting at Ghost Ranch. The committee chair is **Susan Barger** and the core committee included **Bettina Raphael, Rae Beaubien, Steven Prins, Dale Kronkright, and Landis Smith** with additional help from **David Rasch, Patricia Morris, Maureen Russell, and JoAnne Martinez Kilgore**.

Bettina Raphael writes: “After a lovely long working life in conservation, I am hanging up my Optivisor and unrolling my swabs. I will continue to consult and perhaps teach/lecture but no more bench work for now. I look forward to painting more, worrying less, and enjoying New Mexico.”

Regional Reporter
Silvia Marinas-Feliner, M.A.

Pacific Northwest

At the University of Washington (UW) libraries, senior conservator **Justin Johnson** and the rest of the conservation staff said farewell to summer pre-program intern **Alexa Machnik**. During her 10-week internship, Alexa treated a range of western rare book structures and honed her leather-working skills both in traditional bookbinding and in conservation treatment. Alexa also made a significant contribution to the conservation center’s ongoing project with the UW East Asia library’s collection of rare Chinese stele rubbings.

In July, Justin had the pleasure of visiting **Tami Lasseter Clare** in her lab at Portland State University where she conducted FTIR identification of historic repair materials found within a seventeenth century manuscript from the UW’s music library. Justin reported on this work at a recent convening of the Pacific Northwest Consortium for the Science of Cultural Heritage Conservation in Portland, OR.

Claire Kenny joined the UW Libraries and Henry Art Gallery as the new Joint Associate Conservator for Paper and Photographs in October 2017. This is a three-year appointment funded by a \$300,000 grant from the Andrew W. Mellon Foundation. At the libraries, Claire has been treating regional photographs and works on paper, including photographs from the Seattle Camera Club and drawings by Eddie Sato. At the Henry, she has been treating works from two collections of European prints: the Stimson-Bullitt Collection of nineteenth-century prints and the recently acquired Albert Feldmann Collection of European master prints.

Miriam Clavir’s second mystery novel, *Fate Accompli: Murder in Quebec City*, has just been published (Bayeux Arts). This story continues *Insinuendo: Murder in the Museum*, with Berry Cates now an archaeological conservator in historic Quebec City. Berry loves this work and the

city’s atmosphere of joie de vivre - until a too-intimate murder she encounters on the dig shatters any notion of “joy in being alive.” *Fate Accompli* is a medium-boiled murder mystery written, to borrow a line, “for intelligent people with colds.”

This summer, **Susie Lunas** finished repairing a *Royal Bible Scroll*: a double-sided scroll supported by a wooden/binders’ board case and wound up and down by a key. She also sewed together two halves of a 1750 printing of Milton’s *Paradise Lost* and then gold-stamped a sympathetic design on the new, leather spine.

The Royal BC Museum conservators are regrouping after a very busy schedule of loans and exhibitions last spring. **Lisa Bengston** coordinated the conservation work on a brand new travelling exhibition *Egypt: The Time of Pharaohs*. Having originated in Europe, this exhibit was not built to the seismic standards required for the Canadian west coast earthquake zone, necessitating redesign and construction of about a dozen new mounts, which **George Field** accomplished. This was a good lesson in the nature of “turnkey” exhibits, which are rarely as straight forward as contract negotiators might assume.

Lisa has also been busy with several large and small loans, the Japanese tsunami debris collection, and XRF testing of natural history specimens. George Field travelled to Bogota, Colombia to de-install, pack, and courier back the *First Nations Masterworks* exhibit from the Museo del Oro. He has also been involved with the installation of a new engineered roof and floor for Wawaditla, the First Nations big house on the Royal BC Museum property, and several permanent exhibit upgrades.

Kjerstin Mackie has been preparing the last of the Kwaday Dan Tsinchi materials for shipment to their ancestral homeland. **Colleen Wilson** is working closely with the Royal BC Museum learning staff to minimize the impact of their programs on collections.

Lauren Buttle has been working to prepare artworks for internal use as well as photograph albums for an upcoming exhibit on the work of 19th-century photographer Frederick Dally. With a shift to professional development, **Kjerstin Mackie** contributed three presentations

Regional News, continued

on the *Kwaday Dan Tsinchi* project at the World Congress on Mummy Studies in Tenerife, Spain and **Kasey Lee** presented a poster at the CAC Conference on the BC HERN project.

Most of the conservators attended the Pacific Conservation Group meeting at the UBC Library in Vancouver, where Kasey presented on developments in risk management at the RBCM. Kasey was also fortunate to attend the plastics conservation workshop at CCI.

The local conservation community is looking forward to attending Richard Wolbers' New Methods for Paper and Textile Bathing and Stain Removal workshop next May that Lauren Buttle was able to set up at the Royal BC Museum.

Former intern **Katie McEvoy** continues to work on contract cataloguing a newly acquired collection of 18,000 palaeontology specimens. She also assisted with the movement of the majority of the palaeontology collection to the basement, where it is less likely to flatten the conservation labs in the event of an earthquake. Finally, the department is excited to share the news that **Jana Stefan**, former conservation intern and current exhibitions supervisor, has just brought a lovely set of twins into the world, Iona and June. Congratulations Jana!

In early July **Corine Landrieu** worked on *Typewriter Eraser, Scale X*, now located by MoPOP, in collaboration with **Alex Obney** of Fine Art Finishes.

The Seattle Art Museum conservation team had the pleasure of collaborating with fellow conservators as well as colleagues across disciplines in multiple collections-based projects and talks. **Liz Brown** and **Cooper Whitlow**, SAM's Audiovisual Services Manager, presented a talk titled "Considering Strategies for Time-Based Media" at the meeting PreserveIT! 2018: Analog vs. Digital at the Living Computers: Museum + Labs in late April.

For two days in May, the SAM conservation department hosted the first session of the Seattle Heritage Responders Workshop, organized by FAIC and the Seattle Heritage Emergency Response Network (SHERN). This session at the museum focused on emergency management, responder roles, and recovery with collections care salvage

methods, and included an emergency supply materials demonstration by **Nicholas Dorman**.

At AIC's 46th Annual Meeting in Houston, **Geneva Griswold** chaired the AIC Sustainability Committee session. **Liz Brown** completed the reinstallation of Mark di Suvero's *Bunyons Chess* at the Olympic Sculpture Park (OSP) with great thanks to **Mark di Suvero** and Studio, **Virginia Wright**, **Brian Beck** of Studio E, Fabrication Specialties Ltd, and others.

In parallel with preparations for the reinstallation of the galleries at the Seattle Asian Art Museum upon reopening from renovation, Geneva led the initiative for the 14th-century Chinese wooden sculpture in the SAM collection, *Monk at the Moment of Enlightenment*, to be CT scanned by Delphi Precision Imaging, in conjunction with scholarship by **Ping Foong**, Foster Foundation curator of Chinese Art at SAM.

Continuing on the progress of the restoration of an important pair of Japanese screens from SAM's collection, funded with thanks to the Bank of America Conservation Project grant, Nicholas visited **Tomokatsu Kawazu** for an update on the Edo-period *Scenes of Life In and Around the Capital* (rakuchu rakugai-zu) screens currently undergoing treatment at Studio Sogendo.

This past season, they celebrated **Julie Creahan** on the occasion of her retirement after nearly 35 years with the SAM conservation department. **Marta Pinto Llorca** is now the senior collections care manager and **Monica Cavagnaro** is the associate collections care manager. **Vaughn Meekins** has been appointed as the conservation technician.

Milena Carothers has been interning at SAM this summer under the supervision of Geneva, as well as working with **Liz Brown** at OSP in Liz's usual summer work on *The Eagle* by Alexander Calder, *Seattle Cloud Cover* by Teresita Fernández, Jaume Plensa's *Echo*, Mark di Suvero's *Schubert Sonata*, and *Persephone Unbound* by Beverly Pepper. **Jenna Harburg** has just joined the department as a regular intern.

Regional Reporter
Corine Landrieu

Rocky Mountain

Jennifer Parson recently traveled to Fiddletown, CA, a small gold rush town about an hour east of Sacramento, for an onsite visit to survey the historic Chew Kee Store. Built in 1850, the general store and traditional medicine shop is a time capsule that reflects 100 years of continuous habitation by Chinese immigrants. Jennifer was there to assess how to preserve the crumbling papers that cover the earthen walls including newspapers from the time, red Chinese banners, elaborately decorated tea boxes, calendars, account books, and labels on herb cabinets. She is likely to return later in the fall for the conservation work.

In her studio, she continues work on a number of interesting projects including a group of drawings and paintings from the Punjab region of India from circa 1850 as well as an album of rare maps of the United States made shortly after independence. She is also working with the collections manager at the CU Boulder Art Museum to improve the housing of the works on paper.

The Denver Art Museum's IMLS-funded electronic media conservation project is coming to a close. The project has led to a much deeper understanding of the collection and has made significant strides towards the preservation of some of the museum's most vulnerable artworks. **Eddy Colloton** and **Kate Moomaw** presented on the progress during the EMG session at the AIC conference this past May in Houston.

On September 10, Eddy joined the Hirshhorn Museum, where he has accepted the position of time-based media preservation specialist. We are grateful for Eddy's contributions to the DAM and wish him ongoing success. **Dylan Lorenz** will be joining the DAM as a contract conservator for electronic media in August. In other activities, Kate assisted with the varied installation of *Jeffrey Gibson: Like a Hammer*, Gibson's museum debut. She has also been focusing on treatments for *Serious Play*, an exhibition featuring an amazing array of mid-century modern design, co-organized by the Denver Art Museum and Milwaukee Art Museum. **Julie Parker** is also undertaking treatments for this exhibition.

At the Denver Art Museum, **Pam Skiles** has been treating a Homer Boss painting, as

Regional News, continued

well as conducting reviews for several upcoming exhibitions, including the full range of the DAM's recent gift of the Berger Collection of British Art. In May, Pam and **James Squires** presented *Clyfford Still: Conservation of the Artist's Voice* at the Conference on Modern Oil Paints in Amsterdam. Also at the Clyfford Still Museum, they are completing the final unrolling and inventory of Still's paintings.

Gina Laurin welcomed fellow objects conservator, **Julie Laffenberger**, director of conservation and technical studies at the Walters Art Gallery, to the DAM in July. Julie is undertaking research on 17th- and 18th-c. carved/polychromed ivory figures from the Philippines exported to the New World. Julie examined approximately 20 pieces from the DAM's Spanish Colonial collection.

Harriet "Rae" Beaubien, retired head of conservation/senior objects conservator at the Smithsonian Institution (MCI), spent 2 days at the DAM in August. Rae, Gina, and **Victoria Lyall**, Frederick and Jan Mayer curator of Pre Columbian Art, reviewed 40 pre-Columbian metal artifacts scheduled for future exhibitions. In September, Gina will attend the IIC 2018 Congress in Turin entitled Preventive Conservation: The State of the Art.

Stampede! Animals in Art, animal-themed or -related objects from the DAM's collection continues with a new rotation. Gina has been overseeing the conservation assistants: **Samantha Hunt**, treating two Spanish Colonial feather paintings as well as a small Han Dynasty ceramic horse; and **Tess Hamilton**, on the treatment of the head and torso of a larger Han Dynasty ceramic horse. **Allison McCloskey** and **Francisca Lucero** have been preparing textiles and fashion; **Sarah Melching** has readied a range of posters, prints, and photographs. In addition, Allison and Fran are undertaking treatments of a Pre-Columbian mantle as well as Spanish Colonial liturgical vestments for upcoming exhibitions. The entire DAM conservation staff wishes Tess all the very best as she embarks on her graduate studies at the NYU IFA program.

Gina and **Mark Minor** completed the treatment of an 18th-c. Italian Rococo mirror that will be featured in the upcoming exhibit, *Dior: From Paris*

to the World. Allison, Fran, Sarah, and mountmakers **Steve Osborne** and **Nick Donaldson** are contributing to the Dior effort. A myriad of fashion looks, accessories, and related ephemera will be presented in colorful and creative displays.

In May, Nick attended the 2018 PACCIN rigging workshop in Seattle. **Julia Latané**, **Luke Boehnke**, and **Kevin Marshall** provided instruction on rigging techniques and compression lift rigging.

Julie Parker has been working on several different projects, including at the Denver Museum of Nature and Science (Dodge Wallace Foundation funded treatment project), the Denver Art Museum (in support of the *Serious Play* exhibit), and History Colorado (supporting the upcoming exhibition of Ute materials). She also recently completed a collaboration with **Catalina Vasquez Kennedy** on a large early work by Abstract Expressionist painter Miriam Schapiro for a private collector.

Greetings from the conservation lab at the Center of the West in Cody, Wyoming! Many colleagues came to carry out projects this summer: **Jennifer McGlinchey** taught paper conservation and consulted on McCracken research library projects, **Carmen Bria** came to consolidate and roll a very large painting, **Daniel Kaping** and **Kaitlyn Wright** treated a large number of the center's outdoor bronzes, and **Vanessa Ocana Mayor** taught a session on Plains Indian materials and techniques.

Larry Todd, Ph.D., renowned Colorado and Wyoming archaeologist worked with the interns on the analysis of lithics from the Washakie Wilderness.

There were six interns in the lab this summer. **Sarah Freshnock** served as the project manager for the treatment of over 500 letters relating to an important figure in western American military history. **Alyssa Rina** and **Kate Breitenstein** managed the pXRF analysis of the Washakie Wilderness lithics. **Brianna Connaghan** worked on rare books from the McCracken research library. The project managers of the letters and lithics projects taught the other interns and used the other interns' unique skills in carrying out the projects. **Dee Rudolph**, a college student studying ceramics, has been an intern for four summers. She announced

this summer that she is heading for a career in conservation. **Claire Pfister**, a Cody high school student, is completing her third summer in the lab.

Regional Reporter
Julie Parker

San Diego

The Balboa Art Conservation Center reports that **Bianca Garcia**, assistant conservator of paintings, participated as an instructor in the Andrew W. Mellon Opportunity for Diversity in Conservation summer workshop 2018 offered by the UCLA/Getty program in the conservation of archaeological and ethnographic materials. She shared with the 15 participating students her path into the field of paintings conservation, and introduced them to the use of UV fluorescence in the examination of works of art and historic artifacts.

Jacinta Johnson, assistant conservator of paper at BACC, returned for a second year to teach the first-year students at the Winterthur/University of Delaware program in art conservation about conservation assessments alongside **Joelle Wickens**. She lectured about her assessment experiences and guided the students during a one-day assessment of a diverse collection of art belonging to Central High School in Philadelphia, the second oldest public high school in the country.

Carli Fine Art Conservation has spent the summer maintaining outdoor sculpture of various media including wood, marble, painted steel, and bronze. They have addressed several environmental installation challenges, focusing on developing care protocols for artworks in extreme marine environments. They are collaborating with Signature Sculpture of Palm Desert on repatination options for a severely damaged bronze and will be attending/contributing to the San Diego patina seminar at Industrial Metal Supply in August.

Julie McInnis has left San Diego to

Regional News, continued

relocate to San Francisco for the newly created collection care assistant position at the Fine Arts Museums of San Francisco. Before leaving, she surveyed and completed minor treatment on the current round of maps displayed at the San Diego Natural History Museum research library. She is excited to return to the Bay Area, but loved her time in Southern California and all the wonderful people she met.

Regional Reporter
Frances Prichett

San Francisco

The Asian Art Museum has just completed a four-year project for remounting an important pair of Japanese folding screens in the collection. *Cranes* screens by Kano Ujinobu, were remounted by the Nishio Conservation Studio in Washington, D.C. This project was generously funded by the Sumitomo Foundation. The screens were in the galleries in August, 2018.

Shiho Sasaki attended the AIC workshop “Use of Chelating Agents in Paper Conservation.” It was organized by FAIC and Stanford University. In March, **Mark Fenn** attended the Forbes Symposium on Asian Art at the Freer/Sackler Gallery in Washington DC and a workshop led by **Dan Kushel** for Computed Radiology (the process formerly known as “digital xray”) at the conservation facilities at the M.H. DeYoung Museum. This conveniently coincided with the acquisition of a new Durr digital scanner that was generously donated to the Asian Art Museum by **May Chen** and **K.M. Dan**, MD.

Conservators in the Fine Arts Museums of San Francisco paper lab were delighted to host the summer internship of **Madison Brockman**, a 3rd year student in the Winterthur/University of Delaware program. At the end of the summer they will be sad to lose Mellon Fellow **Anisha Gupta**, who has accepted the job of assistant paper conservator at the American Philosophical Society in Philadelphia. Anisha has been active in AIC’s Equity & Inclusion Working Group, as well as diversity initiatives at the Fine Arts Museums.

The textile lab at the Fine Arts Museums of San Francisco is grateful to have **Meg Geiss-Mooney’s** expertise in condition reporting a very large gift of late 20th century/early 21st-century western couture garments. Meg has set up shop in the lab’s ‘wet room’ and is busy trying to document 6-8 costumes a day.

Anne Getts and **Sarah Gates** worked to dress the 80 some mannequins for *Contemporary Muslim Fashion* which opened in September. They are also interviewing for two temporary costume mounting assistant positions. One is immediate and temporary to help with installing CMF and the other more long-term, helping to travel CMF internationally as well as prepping for additional costume shows. It’s a big change from the 1970s, 80s and 90s when flat textiles were the main focus, most notably the Museum’s collection of monumental European tapestries from the 15th - 20th c. and the McCoy Jones collection which encompasses both flat weave and pile textiles.

The objects lab at the Fine Arts Museums of San Francisco is preparing for fall Gauguin and Mughal jewelry exhibitions. **Jane Williams** and Mellon Fellow **Colleen O’Shea** had a whirlwind introduction to 16th-century German armor and historic mounts this summer, preparing two composite suits for the *Truth and Beauty* exhibition. Colleen will continue this fall to research Papua New Guinea wood carving and efflorescence on a 19th-century wax and plaster Medardo Rosso sculpture, and to treat an 18th-century console made by Robert Hume.

Céline Chrétien recently treated a contemporary artwork, Tom Marioni’s *The Golden Wing*, consisting of a hinged panel covered with yellow butterfly wings, for an installation in the permanent galleries. Céline is also carrying on the study and the treatment of a bronze version of a Michel Anguier sculpture, *Hercules and Atlas*. Chemical and structural analyses, as well as comparison with the terracotta version owned by the Louvre in Paris, are expected to contribute to a better understanding of its history.

Jena Hirschbein joined the department in the fall as an assistant conservator. She is currently working with the Africa, Oceania, and Americas collections, and delving into

the research and treatment of a *canapé à la turque* commissioned by Marie Antoinette.

The Museums are thrilled to welcome collections care assistant, **Julie McInnis**, who is dividing her time between the objects and textiles lab, and tackling museum-wide preventive care issues, including IPM, environmental monitoring, and display materials testing. Julie has worked in preventive conservation on a wide range of collections at the San Diego Natural History Museum and the Library of Congress in Washington DC.

Heida Shoemaker participated in a workshop at Stanford University, “The Use of Chelating Agents in Paper Conservation” taught by Antoinette Dwan and Chris Stavroudis, in March. Great group of conservators and learning environment (even the science part!). She has been adapting her stain reduction treatments to incorporate the new solutions and techniques, and has had good results!

Candis Griggs Hakim is thrilled to be settling back into the Bay Area after six years working for the National Museum project on the other side of the globe in Doha, Qatar. As soon as the (remodel) dust settles on a home she just purchased in Petaluma, she’ll be taking in private work again for objects collectors in Sonoma County and beyond.

Regional Reporter
Alisa Eagleston-Cieslewicz

Texas

In July the Harry Ransom Center hosted a regional workshop session on gels in conservation. The workshop, led by senior paper conservator at the Amon Carter Museum of American Art **Jodie Utter** and Harry Ransom Center book conservation fellow **Kimberly Kwan** presented a review of the talks from the London “Gels in Conservation” conference, and then led an afternoon hands-on workshop focused on the preparation and use of gels, primarily in paper and book conservation. The workshop was attended by 16 conservators from Central Texas, Houston, and the Dallas/Fort Worth area.

Regional News, continued

The paper conservation lab at the Harry Ransom Center is very pleased to welcome **Emily Farek**, our new graduate intern who will work with preservation and conservation division staff and colleagues across the center over the next 11 months. Emily is a graduate fellow in the Winterthur/University of Delaware program in art conservation (WUDPAC) class of 2019. She is a paper major and library/archives minor. She graduated from Emory University in 2014 with a BA in art history and a minor in Italian, and gained pre-program

conservation experience at the Carlos Museum, the American Academy in Rome, Stanford University's Cantor Arts Center, and the Georgia Archives. Since beginning at WUDPAC in 2016, Emily has held internships at the Conservation Center for Art and Historic Artifacts (CCAHA) in Philadelphia and Colonial Williamsburg.

Regional Reporter
Ken Grant

WAAC welcomes Webmaster Jenninifer McGlinchey Sexton's new daughter Cameron, born May 12, 2018, and older sister Marie.



(I know this photo is larger than usual, but it was so wonderful, I could not crop it. Ed.)

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: \$10.00

(\$8.00 copy for orders >10 copies)

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The Use of Chelating Agents in Paper Conservation

A Workshop Review

Introduction

The workshop “The Use of Chelating Agents in Paper Conservation” took place at Stanford University, March 27-29, 2018, which the author attended thanks to the generous support of the FAIC/NEH individual professional development scholarship grant and the Colonial Williamsburg Foundation. The group of attendees was composed of 22 paper conservators, mostly mid-career, with a variety of experience regarding chelating agents.

Antoinette Dwan and Chris Stavroudis were the instructors of this program. Dwan is a senior conservator of works of art on paper, who graduated from the University of Delaware and has been working in private practice for more than 25 years in Sebastopol, CA. Chris Stavroudis is a paintings conservator in private practice based in Los Angeles, CA. He also graduated from the University of Delaware, and since 2002 Stavroudis has been developing the Modular Cleaning Program (MCP).

This article is intended to provide a review of the workshop and to give some research perspectives on the subject. Prior to the start of the program, spectrophotometry and XRF were performed on samples to be used during the workshop, in order to evaluate any correlation between the amount of metal ions removed and visual changes. While results presented here cannot provide definitive conclusions, the hope is to contribute to a broader discussion about chelating agents and their use during the treatment of paper objects.

The Theoretical Approach of the Use of Chelating Agents in Paper Conservation

Chelating agents – “chela” coming from Greek meaning “claw of the lobster” - are chemical compounds that sequester metal ions (Burgess 1991, 36). These compounds, also called ligands or complexing agents, contain two or more electron donor atoms that can form coordinate bonds to a metal atom. Each successive donor atom that binds creates a ring around the metal atom, resulting in the formation of a chelation complex (Howard and Wilson 1992).

Although they still are not widely used in paper conservation, chelating agents have been integrated in conservation treatments for paintings, objects, and textile since the 1980s (Dupré 2010). Dwan has been using them in her private practice for the past fifteen years, and chelating agents play an important part in the MCP developed by Stavroudis.

Their chemistry in regard to paper conservation was first stated by Burgess in the 1990s (Burgess 1991). Initially seen as a necessary first step prior to chemical bleaching - as well as removing metal ions detrimental to the long-term stability of paper - they have also been shown to be an aid to the removal of discoloration and stains during aqueous treatment.

The complexity of these chemicals, combined with the inherent fragility of paper, may partially explain why they still are not commonly used in paper labs. This highlights the importance of workshops taught by Dwan and Stavroudis, specifically developed for experienced paper conservators. The lecture part of the workshop was divided between the two instructors. Stavroudis’ presentations were dedicated to the chemistry of chelating agents, whereas Dwan presented the applications for paper conservation.

Because chelating agents act as multifunctional weak acids when dissolved in water, the acid-base theories were presented by Stavroudis. These included explanations of strong acids/bases versus weak acids/bases, and the pH concept. Ionic strength, as well as conductivity were discussed. Following this introduction to aqueous chemistry, Stavroudis detailed the theory of chelating agents and focused specifically on citrates, EDTA (ethylenediaminetetraacetic acid), and DTPA (diethylenetriaminepentaacetic acid).

Chelating agents are effective only in an aqueous environment, with water as the exchange medium. The metal ion must dissolve into water for the chelating agent to bind it in its cage, promoting the dissolution of more metal ions. The appropriate use of chelating agents is dependent upon several parameters such as the pH of the solution, the formation constant (pK_f), and the solubility product of a metal salt in water (pK_{sp}).

Chelating agents are most effective when they are completely ionized, which occurs under alkaline conditions. Because they are weak acids, each ionization stage has a specific pK_a (dissociation constant). The degree of ionization also has an influence on the form of the chelate complex (Timar-Balazsi and Eastop 1998).

The formation constant (pK_f) is the equilibrium constant for the formation of the chelate complex, with the metal ion and the ligand in its fully dissociated form. The pH also has an influence on the formation constant, since hydroxide ions can interact with the metal ion and affect its ability to form a complex. For example, iron will form iron hydroxide, which is very insoluble and does not complex easily, under alkaline conditions (Burgess 1991).

How a particular metal ion dissolves in water is defined by the dissociation constant of its metal salt (pK_{sp}). Therefore, the pK_f of a given metal ion for a chelator must be larger than the pK_{sp} of the concomitant metal salt for the chelation to take place.

Citric acid, considered a mild chelating agent, can be prepared with either ammonium hydroxide or sodium hydroxide to add the counter ion. If ammonium citrate has been predominantly used in the past, both Wolbers and Stavroudis have been advocating for a switch to sodium citrate. In case there are residues of ammonium citrate left

in the paper, the ammonium counter ion will eventually evaporate, leaving citric acid behind that could potentially be harmful to cellulose.

EDTA was first recommended as an aid to remove transition metals from paper before bleaching with sodium borohydride (Burgess 1991; Lehtaru and Ilomets 1997). DTPA, which can be described as an enhanced version of EDTA, has been progressively replacing the latter. DTPA has higher formation constants for all metal ions than those of EDTA and is viewed as more effective.

Sodium citrate, EDTA, and DTPA are prepared by progressively adding 10% sodium hydroxide to the solution until reaching the desired pH. All of these chelating agents were used at 0.05M to 0.1M concentrations. Most conservators are still preparing their solutions in weight per volume, which is not advisable if one wants to evaluate the efficacy of each chemical and compare them. For example, a 0.05M solution of citrate is 0.96%; of EDTA is 1.46%; and of DTPA is 1.97% (w/v).

Stavroutidis gave examples of chelation scenarios relating to paper. One of the drawbacks of using chelating agents on paper is that calcium ions will be chelated and removed from the substrate. According to Dwan and Stavroutidis, the theory behind using chelating agents as an aid to remove discoloration/stains is that the removal of calcium opens up degradation clusters. Indeed, soil particles tend to stick to calcium ions.

Cellulosic fibers and soil particles are usually negatively charged when they are immersed in water. Calcium ions, that are positively charged, create a linking bridge between the two negatively charged items, making soil more difficult to remove (Daniels 2011, 293). This notion is well-known by textile conservators and is the principal reason why chelating agents are often found in laundry detergent.

However, Stavroutidis presented an option to preserve the calcium ions in paper, by adding an equal molar concentration of calcium hydroxide to the DTPA solution. This solution would be able to target more specifically iron II ions, without stripping calcium ions out of the paper.

Introduced as an “improved Seth Irwin’s method” (Irwin 2011), Stavroutidis also presented a solution containing DTPA, calcium hydroxide, and a reducing agent, such as sodium metabisulfate. He described briefly some of the reducing agents used in paper conservation, such as sodium borohydride, sodium dithionate, and sodium metabisulfite.

These can be used in conjugation with chelating agents, in order to transform very slightly soluble iron III into more soluble iron II. Then iron II can be chelated, which is not the case with iron III. However, reducing agents have a bleaching effect and the concentration and type of reducing agent should be considered.

Integrating Chelating Agents in Treatment Protocols

Dwan’s presentation focused on her extensive experience using chelating agents. Several parameters should be considered in designing a successful treatment with chelating agents.

First, if possible, the artwork should be bathed to remove as much of the discoloration products as possible. Then, media should be tested with the chelating solution. Dwan insists on the need to repeat testing each time the concentration of the chelating agent solution is increased or the pH changed (Dwan 2015, 11).

The artwork can be immersed, floated, or treated locally for stain reduction with the appropriate solution. For objects that tolerate only minimal amounts of water, the solution can also be applied locally with swabs or cotton balls. However, this surface cleaning method is recommended only for hard sized papers, as cotton can be abrasive.

When possible, Dwan uses float washing, particularly for sensitive media, and has been having great success with this method. Chelating agents can be successful in removing pronounced mat burns without using any bleach. Dwan also uses chelating agents in combination with reducing agents with a personal preference for sodium borohydride. Another technique involves spraying the reducing agent with an airbrush in order to obtain a very soft transition, particularly for mat burn reduction.

Chelating agents can be used alternately with reducing agents with a rinsing step in between. Indeed, a critical step in treatment with chelating agents is the rinsing. The artwork must be rinsed after every application of chelating agents and reducing agents. This step is critical in order to leave as few chelating agent residues as possible in the substrate, as well as to remove additional discoloration. Dwan has been using calcium hydroxide at pH 8.5 as a final rinsing solution in order to reintroduce calcium in the paper after treatment.

The practice session was organized around a series of exercises. Each workshop participant brought their own samples. The exercises included a comparison of chelating agents at similar concentrations, comparison of one chelator at different pH levels, a comparison of various reducing agents, and finally variation in combinations of reducing agents and chelating agents. The practical session included a demonstration of how to use pH meters and how to prepare each solution.

Further Research and Development

In preparation for the workshop, spectrophotometry measurements and XRF were performed on samples of papers. These were selected from a cache of expendable papers available in the Colonial Williamsburg Foundation’s paper lab.

The Use of Chelating Agents in Paper Conservation, continued

Spectrophotometry measurements were performed with a spectrophotometer Konica Minolta CM-2600d (using D65 illuminant, 10° observer, and CIELAB 1976 color space) before and after the workshop. XRF was performed by Kirsten Moffitt, materials analyst at the Colonial Williamsburg Foundation with a Bruker Tracer III-V+ portable XRF device with a rhodium (Rh) target and a silicon PIN (Si-PIN) Diode detector. Parameters both before and after treatment were 15kV, 28uA, vacuum, no filter, 120 second duration. Measurements were acquired on blank areas of the papers.

All samples were washed, prior to treatment with chelating agents, with ammonium hydroxide (pH 8). They were rinsed, after treatment with chelating agents, with a calcium hydroxide solution (pH 8.5). This project is by no means a rigorous research and only intends to provide a few

comments and avenues for further investigation. There are many parameters at play, such as the time constraint of the workshop, and this should be considered while reading our observations.

Not all papers could be treated with all chelating agent solutions provided. If time allowed, it would have been interesting to compare the four papers with equivalent solutions.

XRF results (Fig. 1) appear different for each paper. However, the results for the metal ions removed from a particular paper were consistent for all treatments. For instance, paper #2 shows a decrease in calcium following all treatments and paper #3 shows a decrease in calcium, iron, and silicon. Paper #4 shows mostly a decrease in calcium and iron.

Fig. 1. XRF results for four different papers. The Xs indicate that the paper did not receive a particular treatment and that no analysis was performed. XRF results are qualitative and not quantitative. Quantitative XRF demands elaborate and time consuming calibration that was beyond the scope of this project (Barrett et al. 2012).

XRF results (comparison before and after treatment)				
Type of treatment	Paper #1	Paper #2	Paper #3	Paper #4
0.5M sodium citrate (pH 6.5), 1 bath 15-20min	No significant change	Decrease in Ca	X	X
0.1M sodium citrate (pH 6.5), 1 bath 15-20min	No significant change	Decrease in Ca	X	Decrease in Fe, small decrease in Ca
0.05M DTPA (pH 6.5), 1 bath 15-20min	No significant change	X	X	X
0.1M DTPA (pH 6.5), 1 bath 15-20min	No significant change	Decrease in Ca	X	Decrease in Fe
0.1M DTPA (pH 8.5), 1 bath 15-20min	No significant change	X	Decrease in Si, Ca, and Fe	X
0.1M DTPA (pH6.5), 2 baths 20min each	No significant change	X	X	X
0.1M DTPA buffered with citrate (pH 6.5), 1 bath 15-20min	X	X	Decrease in Fe, Ca, and Si	Decrease in Ca, Fe
0.1M DTPA and calcium hydroxide buffered with citrate (pH6.5), 2 baths 20min each	No significant change	Decrease in Ca	X	X
0.1M DTPA and calcium hydroxide buffered with citrate and 2% sodium metabisulfite (pH6.5), 2 baths 20min each	No significant change	X	Decrease in Ca, small decrease in Si and Fe	X

Paper 1: machine-made blue laid paper, early 20th century. Blank areas contain Al, Si, Ca, Cr, Mn, and Fe.

Paper 2: machine-made thick wove paper, early 20th century. Blank areas contain Ca, Al, Si, Fe, and Ba/Ti.

Paper 3: machine-made thick wove paper, early 20th century. Contains small amounts of Al, Ca, Fe, Zn, and Si.

Paper 4: machine-made moderately thick wove paper, early 20th century. Small amounts of Al, Ca, Ba/Ti, and Fe detected.

The Use of Chelating Agents in Paper Conservation, continued

Interestingly, calcium appears to be the most frequent ion removed, and this does not seem to be affected by the type of solution used. This may indicate that the rinsing step with calcium hydroxide did not compensate for the calcium removed by the treatment.

Paper #1 presents no significant change detected in metal content, for all treatments.

Spectrophotometry results (Fig. 2) were utilized only for paper #1 since this set of samples was the one consistently treated with most of the solutions. On this set of samples, there is no visual difference between the use of sodium citrate and DTPA at 0.05M. These delta E* also reflect that the difference before and after treatment cannot be detected visually, since the human eye starts perceiving a difference in color around a Delta E* of 2 (Macadam 1942).

When the sodium citrate concentration was doubled (0.1M), the cleaning efficiency was doubled as well and a visual difference can be observed.

However, this wasn't the case for DTPA, with a Delta E* of similar values at concentrations 0.05M and 0.1M. An increase in pH for the DTPA solution also did not increase the Delta E* for paper #1. But a second bath with DTPA

improved the cleaning efficiency considerably, when compared to a single bath with DTPA.

Two washing steps with a solution containing DTPA, calcium hydroxide, and citrate had a similar visual effect.

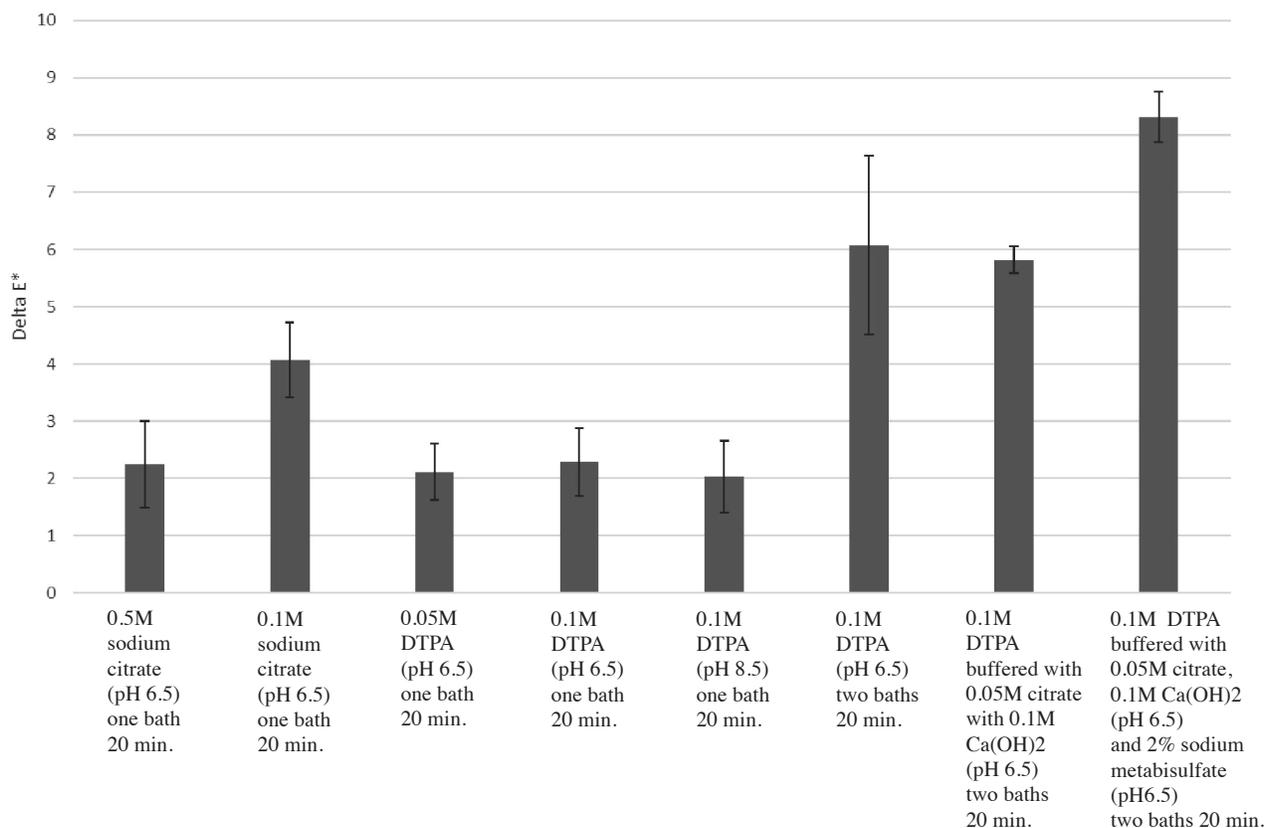
Finally, the solution containing DTPA, calcium hydroxide, citrate, and 2% metabisulfite caused the biggest difference before/after treatment. This is not surprising since sodium metabisulfite also acts as a mild bleaching agent.

When compared with the XRF results (fig. 1), the lack of change in metal content after treatment, throughout all types of treatment, seems surprising. One may intuitively correlate a greater removal of metal ions with greater removal of discoloration.

The amount of metal ions removed may not be significant enough to be detected by the instrument, but still translated in very different visual impacts. This shows the discrepancy that conservators often observe between theory and practice.

DTPA, considered a stronger chelating agent, can sometimes be less successful at removing discoloration than sodium citrate, considered a weaker chelating agent. This underlines the importance of testing solutions before treatment.

Fig. 2. Comparison of Delta E* values (CIELAB 1976, D65 illuminant, 10° observer) for paper #1, after treatment with various chelating agent solutions. Three measurements per sample were performed, with a spectrophotometer Konica Minolta CM-2600d.



The Use of Chelating Agents in Paper Conservation, continued

Further research is needed to understand the specific mechanisms behind the removal of discoloration with chelating agents. Future investigations should also include an evaluation of the rinsing step efficacy to determine how much rinsing is necessary.

Consequently, there is a need to evaluate how much calcium and magnesium need to be reintroduced into paper after treatment with chelating agents. At the end of her presentation, Dwan suggested that further investigation should be performed on metallic components in paper as well as their origins. Dwan further advised that additional experimentation should be done with sodium metabisulfite, a relatively new reducing agent.

Conclusion

Despite the fact that chelating agents have been used on paper for the past 20 years, some research is still needed to understand the long-term consequences of their use as well as the mechanisms behind their efficacy. Conservation literature provides some studies in which aging tests were performed on samples treated with ammonium citrate tribasic (Hashimoto 2015) and EDTA (Lehtaru and Ilomets 1997). Used appropriately, both appear to be safe for paper. DTPA and EDTA have been used increasingly by the paper industry since the 1990s to prevent the transition metal ions such as manganese, iron, and copper from catalyzing the decomposition of peroxide during the bleaching of chemical and mechanical pulps (Virtapohja 1996).

Dwan and Stavroudis' workshop is key to gaining a better understanding of the use of chelating agents in paper conservation and how to safely integrate them in a treatment protocol. Using chelating agents can present a steep learning curve, and each workshop participant will have to do the individual work of experimenting further.

These chemicals, when properly used, can provide some incredible results and are a wonderful addition to the tool set of a paper conservator. While these solutions can sometimes be challenging to prepare, it is worth spending the time to understand the chemistry behind them. When other methods fail, they may provide an efficient tool and a great alternative to bleaching.

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Jobs

Cantor Arts Center

Stanford University

Chief Conservator

The Cantor Arts Center seeks an experienced conservator with a specialty in either painting, paper, or three-dimensional objects to help build a conservation program, and lead conservation planning, programming, and implementation for the museum.

The Chief Conservator will be responsible for the care and treatment of the museum's art collections, with advanced knowledge of profession-wide principles and methods used in the preservation, restoration and conservation of art. The Chief Conservator will assume a vital role in institutional initiatives and research projects, and provide strategic and administrative leadership for the department.

The Chief Conservator will help hire and supervise a staff of trained conservators for a broad range of activities including conservation assessment and treatment of collections, support for ambitious exhibition and loan programs, disaster planning and response, and environmental monitoring.

In addition, the Chief Conservator will oversee the museum's established Art and Science Learning Lab, which provides opportunities for scientific research and dissemination within the field of conservation and conservation science through the Stanford departments of materials science, chemistry and chemical engineering, physics, and the nanosciences.

Reporting to the John and Jill Freidenrich Director, the Chief Conservator will collaborate with the museum's Curatorial and Collections teams, and work closely with staff throughout the museum to ensure the smooth integration and timely completion of conservation and --preservation activities.

Core Duties:

Supervise the activities of the Conservation department and Art and Science Learning Lab, set goals, foster staff development and review

performance. Plan, perform and document conservation treatments for a broad range of objects. Establish priorities in consultation with director, curators, registrars, and collections and exhibitions staff. Coordinate workflows and manage daily operation of the conservation laboratory. Prepare condition assessments of items and collections; advise on conservation needs and options.

Make recommendations regarding objects proposed for exhibition and loan. Train and provide guidance for museum staff in object handling, preservation decisionmaking and physical care workflow. Coordinate preventive care. Hire and oversee specialist contract conservators to perform treatment on objects outside of the realm of expertise of on-staff conservators. Maintain an effective disaster/emergency response and recovery plan, in consultation with the Director of Collections & Exhibitions, Collections Manager, and Director of Security; may lead recovery activities.

Ensure compliance with industry standards and best practices. Maintain program metrics, prepare reports, and contribute to funding applications. Oversee research, evaluation, recommendation and procurement of specialized equipment, supplies and services. Contribute to space planning and collection storage initiatives. Remain current in conservation practices and trends in the profession. Perform advanced scholarly research in the conservation field. Develop and maintain collaborative relationships with local, national, and international colleagues.

Qualifications:

MA in conservation or equivalent degree 7 years of experience in conservation, which 2 of those years are in a lead or supervisory capacity. Combination of education and relevant experience may be considered

Please contact Clarissa Morales, Director of Collections, Conservation and Exhibitions directly with all inquiries. cmmorale@stanford.edu. 650.725.6809

The National Gallery of Art

Washington DC

Frame Conservator

The National Gallery of Art in Washington DC seeks a conservator to treat and manage the antique frame collection for display and loans. The incumbent must have experience working with wood objects, treating and repairing gilded surfaces, managing databases, and maintaining a workshop for the purpose of treating frames.

The frame conservator will work with painting conservators, curators, registrars and designers to accomplish tasks in a highly dynamic environment that is often determined by tight deadlines. The incumbent will also learn to create and maintain files in ConservationSpace, the document management software used in the National Gallery for treatment and loan records.

The position requires a high level of organizational skill and the ability to readjust priorities according to changing needs. The position may occasionally require international travel.

Candidates will be recruited at the GS-11 (\$68,035) salary level. The position includes benefits. The formal recruitment announcement located on the USAJobs website will provide details for assembly and submission of complete applications. Visit the website USAJobs at <https://www.usajobs.gov/> on the Internet and enter "National Gallery of Art" in the Keyword Search line to obtain formal application information.

For general information, contact: Michael Skalka, Conservation Administrator, National Gallery of Art at dcl@nga.gov by e-mail. Do not send any application materials to the email address. Applicants must follow instructions provided in the Gallery's formal position announcement in USAJobs required by the Gallery's personnel department. EOE.

<https://www.usajobs.gov/GetJob/ViewDetails/512858200>

<https://www.usajobs.gov/GetJob/ViewDetails/512858700>

Nano-lime, Emulsions, Gels, and Nanostructured Materials

In February 2018 Pratt Institute, Brooklyn, NY held its second workshop on Nanotechnologies for Cultural Heritage Preservation. The workshop was led by Professors Piero Baglioni and Rodorico Giorgi from the CSGI -- Center for Colloidal and Surface Science (Consorzio Interuniversitario per lo Sviluppo dei Sistemi a Grande Interfase) based in Florence, Italy.

The workshop was organized by Cindie Kehlet, Sarah Nunberg, and Soraya Alcalá. Before going into the details of the workshop, it must be said that Cindie, Sarah, and Soraya put an enormous amount of work into the preparations for the workshop. They prepared and artificially aged mockup sets of tiles coated with resins and paints; stones covered with spray paint; and canvas covered with animal glue, alkyd, and latex paints. They also divided up gels and emulsions to make kits for each participant to take home. All this in addition to the normal tasks associated with hosting a workshop with two instructors and 23 participants.

Drs. Baglioni and Giorgi were amazing – charming, direct, and to the point, and so willing to share information. The workshop was accessible to all the participants necessitating that some of the more complicated details be simplified. However, when they were asked a technical question, the full depth of their knowledge and experience became obvious and was freely shared.

CSGI is a research entity. They spend about 10% of their time on conservation issues. They are also the supplier for the products discussed in the workshop. So, while it is easy to say that the workshop is just a come-on for the product line, this does the workshop no justice. While to some extent underplayed, many of the concepts and products represent anything from a leap forward in materials to a paradigm shift in approaches to cleaning.

Their research focuses on physical aspects of chemistry, offering the conservation community new tools for cleaning works of art based on selectively removing unwanted varnish, dirt, or overpaint while avoiding penetration into, and interaction with, the original layers below. The materials they have developed have low toxicity and, compared with neat solvents, generally have a lower environmental impact. As Professor Baglioni says, “only thinking out of the TEAS triangle will we be able to reduce the use of solvents, toxicity, and interaction with the original.” Meaning we need to start exploring different ways to clean and not to focus on solubilization of the material to be removed.

To put the workshop and methods into context, one must understand that development started with questions and problems relating to fresco paintings – consolidation and removing incompatible treatment materials like Paraloid B-72 and wax from the surface of a fresco (Baglioni et al. 2012). This research was developed as part of the EU NANOFORART project. Since then their methods (and products) have been extended to modern and contemporary surfaces (Chelazzi et al. 2017) as part of the ongoing EU project called NANORESTART.

Nano-lime (sold as Nanorestore Plus®)

One of the vexing problems with treating lime-based plasters is consolidation. Ideally one would use materials of similar mechanical and chemical properties. And, this is indeed the trend for filling voids and large-scale delaminations. Since the setting and cohesive strength of lime plaster is from the reaction of calcium hydroxide with carbon dioxide to form calcium carbonate, an ideal consolidant would be calcium hydroxide in water, or lime water.

However the problem with this is that calcium hydroxide is not very soluble in water so it is nearly impossible to get sufficient carbonation to occur in the matrix to strengthen a friable substrate. Flooding the surface and substrate with the water necessary to carry the calcium hydroxide solution opens other avenues of decay as it can mobilize soluble and semi-soluble salts.

An ideal consolidant would deliver higher concentrations of calcium hydroxide into the substrate where it could react with water and carbon dioxide to form fresh cementitious networks to strengthen the weakened original plaster network. The strengthened network would still be able to breathe and have the same mechanical properties.

Here enters nano-lime, calcium hydroxide crystals formed on a nanoscale. The 50 to 200 nanometer particles are suspended in an alcohol, either ethyl or isopropyl, and are at concentrations of 5 or 10 grams/liter, or higher. Due to the size of the particles and the interaction between the hydroxide bonds on the nano particles with the –OH groups on the alcohol, the particles don't agglomerate. A quick shake and the lime is dispersed in the solvent carrier (Baglioni et al. 2015).

In practice, the nano-lime is allowed to soak into the surface by brushing through tissue. The solution consists of particles that are as small as possible and, consequently, has a greater number of particles and much greater surface area per given amount of calcium hydroxide. This results in a solution with higher reactivity and greater penetration. The reaction with the substrate is faster and more efficient requiring fewer applications than other consolidants (Baglioni et al. 2015).

It is important to test the solution to determine the proper concentration before large-scale application. The nano-lime dispersion can be diluted with the same solvent it is delivered in (ethanol or isopropanol) but anhydrous solvents must be used to avoid trace water reacting with the calcium hydroxide.

If the surface has low porosity or the nano-lime concentration is too high a white haze may form. If that happens, the haze can be removed using water. After the application of the solution, first you wash the surface with solvent and then apply humid cellulose pulp. The pulp should remain on the surface treated until the pulp is dry.

A review of the CSGI workshop at Pratt Institute 12-16 February 2018

Microemulsions (sold as Nanorestore Cleaning®)

We've been hearing about microemulsions for the last few years and, at least in the US, we have thought about them in terms of solubilization. There are two ways to make use of a microemulsion.

A microemulsion allows the solubilization of both materials more or less simultaneously. This solves problems like removing intermixes of materials such as glue/wax or varnish/glue mixtures.

The other, perhaps more common, use of a microemulsion system is to suspend an active dispersed phase into an inert continuous phase. Here, we think of microemulsions that disperse a polar phase into mineral spirits or solvent into an aqueous phase. But again we normally think of the dispersed phase in terms of solubilization.

The cleaning systems developed by CSGI are designed to exploit two different physico-chemical mechanisms to remove unwanted materials. Depending on the nature of the materials to be removed, i.e. low molecular weight substances can be removed by solubilization, while polymers with high molecular weight can be de-wetted.

Dewetting is a difficult concept to describe. It can be thought of as gently encouraging the substance-to-be-removed to cohere to itself rather than adhere to the surface.

Using the example of removing Paraloid B-72 from a surface, the dispersed phase, the solvent(s) in the microemulsion, swells the polymer coating. This raises the B-72's glass transition temperature (T_g) changing the film from the durable, glassy state to a soft rubbery state.

As the B-72 swells, the polymer molecules slip over one another forming a soft blob. The surface energy of the blob will want to be at a minimum and form a spherical blob. The presence of the continuous phase of the microemulsion, the water, will further encourage the formation of the spherical blob and also tend to repel the blob from the surface – hence “dewetting” the surface (Baglioni et al. 2017).

Dewetting is the opposite of wetting a surface. If we want to apply a coating to a surface, we want the coating (and solvent) to wet well onto that surface so a continuous film is deposited without alligatoring or orange peeling. If we apply an aqueous coating to silicone Mylar®, we know that the opposite of wetting will occur – it will bead up and, on drying, will leave a film that is not at all adhered to the silicone surface.

In dewetting, we have the soft blob of B-72 repelled by the more polar surface of the artwork, assisted by the water in the continuous phase of the microemulsion. It is repelled and trying to get off the surface – all without solubilizing the B-72. And most unconventionally, the dewetted coating is removed mechanically, and dry. The coating is simply pushed off of the surface with a dry swab or stick, rolling-up the swollen blobs of B-72. Using a dampened swab

inhibits the rolling up of the coating – it's a process that is counterintuitive and takes some getting used to.

A typical microemulsion developed for removal of PVAc or B-72 (Giorgi et al. 2010) is:

73.3	water (% w/w)
3.7	SDS (sodium dodecyl (lauryl) sulfate), surfactant
7	1-pentanol, cosurfactants
8	propylene carbonate
8	ethyl acetate

Note how low the percentage of surfactant is.

The commercially available microemulsions sold by CSGI are called Nanorestore Cleaning® Polar Coating S; Polar Coating B; Apolar Coating; and Wax. Polar Coating S and B are for removing acrylic and vinylic synthetic polymers as well as aged natural resin varnishes. Apolar Coating has been formulated for mildly polar synthetic and natural polymeric coatings. The Wax microemulsion is formulated for removing wax and oily soils. Full descriptions of the products can be found on the CSGI website: <http://www.csgi.unifi.it/products/orders.html> under the “Products” drop-down menu. Not yet on the website, but of interest is Polar Coating G which is designed for dewetting acrylic coatings (like graffiti).

Gels: Dry; Extra Dry; Max Dry; PG5 and PG6 (sold as Nanorestore Gel®)

CSGI has created a group of gels that will act as carriers for aqueous (or predominantly aqueous) cleaning solutions and leave no residue of the gel behind. The gels conform to a surface but because of how closely the cleaning solution is held in the gel, only the surface of the object is wet, not the substrate (Baglioni et al. 2014). During the workshop they presented chemical hydrogels Nanorestore gel®, chemical organogels, and physical PG gels.

Gels are defined by their rheological properties and are considered in contrast to a viscid liquid. Many of the so-called gels in conservation are actually viscous liquids (e.g. “solvent gels,” xanthan and Pemulen “gels”) although agarose and gellan gum gels are true gels. Defining a true gel is a difficult prospect, best summed up: “a gel is a gel as long as one cannot prove it's not a gel” – a slippery proposition indeed.

Gels can be divided into two “big families”: physical gels and chemical gels.

Physical gels are characterized by their dynamic crosslinking easily changing between solid and liquid and are based on interactions between secondary bonds such as dispersion forces, hydrogen bonds, electrostatic or hydrophobic interactions (Baglioni et al. 2014). Agarose and gellan gum are two examples of physical gels widely used in conservation. Both are derived from naturally occurring polysaccharides.

Nano-lime, Emulsions, Gels, and Nanostructured Materials, continued

Agarose is gelled via intermolecular hydrogen bonding – weak bonds that are prone to change physical condition with any change of temperature or pH. Gellan gum is gelled both by hydrogen bonding and more strongly by the addition of cross-linking calcium ions.

Agarose's and gellan's hydrogen bonded gelled structure can be useful for some aspects in conservation such as their thermo-reversibility. For example we can use it in transition between liquid solution and solid gel, but this can also be an issue in terms of residues left on the surface.

A chemical gel is made by reactions between polymers that create covalent bonds between the molecules. This cross-linking between polymer chains creates a stable, thermal resistant gel that cannot leave any residue on a surface. Chemical gels can be selectively altered to create structures with a wide variety of physical and chemical properties including porosity and flexibility.

The Nanorestore Gels® Dry, Extra Dry, and Max Dry are chemical hydrogels that are flexible sheets, similar to, but much thicker than, soft contact lenses. They can be cut into different shapes, manipulated and removed easily from the surface of an artwork without the possibility of leaving a residue.

The Nanorestore Gels are made of crosslinked chains of poly(2-hydroxyethyl methacrylate) (p(HEMA)) interpenetrated with chains of poly(vinyl pyrrolidone) (PVP) (Domingues et al. 2013). This means that the HEMA monomer is loaded with already polymerized chains of the PVP before the HEMA is polymerized and crosslinked. The PVP chains are mechanically held in place by the network of the p(HEMA) – hence interpenetrated. The PVP is the hydrophilic component that holds water in the gel structure.

The different Nanorestore Gels when saturated for use are usually between 50% and 65% water but are nonetheless cohesive, solid structures. The gels are transparent, cast into 2 mm thick sheets with flat surfaces and are flexible to a degree. They conform to large textural features, e.g. undulations in paper, but are not soft enough to conform to the irregularities of, say, canvas texture. They also have a tendency to break during extended handling.

Different proportions of p(HEMA) to PVP give different pore sizes within the gel and therefore different degrees of holding water or a cleaning system in the gel.

Nanorestore Gel® Dry has the largest pores and is comparatively less water retentive, Extra Dry with medium pores, and Max Dry is the most retentive and has the smallest pore size.

The Nanorestore Gels, as well as the Peggy gels, to be discussed shortly, are delivered loaded with (and stored in) water. The water in the gel is exchanged by simple diffusion with a cleaning system by soaking the gel in the desired cleaning solution.

The gels can be rinsed for reuse by soaking in fresh distilled/deionized water. Note that dilution effects should be considered in the case of soaking a larger gel in a small volume of cleaning solution. [For example, a standard 15 cm x 15 cm sheet of gel holds a volume of roughly 25mL of water. If the gel is soaked in 50mL of cleaning solution, the final concentration of the cleaning solution in the gel would only be 66% of the concentration of the cleaning solution's starting concentration. Using larger volumes of cleaning solution to condition the gel minimizes this effect.]

In use, the gel is blotted on both sides to remove excess liquid. This blotting step is critical to controlling the amount of water brought to the surface of the artwork, and some experimentation is often necessary to match the degree of blotting of the gel to obtain the desired wetting of the surface. It is useful to use two gels in a treatment, one holding the cleaning solution and the other carrying the rinse system. By controlling the degree of blotting of the cleaning gel and the rinsing gel, application and clearance of the cleaning solution can be optimized.

The gels can also be loaded with polar solvents mixed with water. The family of Dry gels can hold up to 90% ethanol while the Peggy gels can hold only 40-50% alcohol in water. (Note that the gels should not be stored loaded with polar solvents as they will irreversibly dehydrate. Always rinse and load with fresh water after using a gel with solvents.)

The "Peggy" gels are literally the most flexible of the gel systems. They were formulated for the treatment of a Jackson Pollock at the Peggy Guggenheim Museum in Venice, hence the name "Peggy" and the designation "PG." The gels are currently under development but should be commercially available by the time you read this. If they are not listed on the CSGI website, email and ask for them by name.

The "Peggy" gels are interpenetrated physical gels based on poly(vinyl alcohol) (PVA). Being physical gels they are distinct from the chemical gels discussed above. Despite this difference they behave like the chemical gels in that they are manufactured into cohesive sheets (as well as pyramids, trapezoids, or sticks which can be used with a blotting action) that cannot leave a residue. Rather than being formed by crosslinking, weaker intermolecular bonds between the PVA molecules give the gels their physical structure. Undisclosed black magic involving freezing and thawing create the weaker-than-chemical crosslinking.

As with the "Dry" gels, the PG gels are interpenetrated with hydrophilic polymers. PG5 is interpenetrated with PVP and PG6 or "Peggy 6" with PVA. (And here's the real black magic: in the Peggy 6 gel, the PVA is physically crosslinked but there are also free, uncrosslinked polymers held within the crosslinked gel structure.)

The PG5 and PG6 gels are more elastic than Nanorestore® gels and they adapt very well to contoured or uneven surfaces. They retain a lot of the liquid that is loaded inside

Nano-lime, Emulsions, Gels, and Nanostructured Materials, continued

the structure and function to swell and solubilize the target material, pulling the grime, swelled varnish, or overpaint into the gel.

Organogels

Chemical organogels are based on cross-linking methyl methacrylate (PMMA) and ethylmethy methacrylate (PEMA), within a liquid phase composed of organic solvents. They are the only gels of the Nanorestore products that are designed to carry organic solvents. The organogels are complimentary to the hydrogels described above and expand the range of “tools” for cleaning, thinning, or removal of natural or synthetic varnishes, coatings, and adhesives (Baglioni et al. 2015).

These gels function in a similar manner to the pHEMA gels. They retain the solvent inside the gel system, allowing for controlled swelling of the target area and migration of the wetted surface into the gel. The organogels are used specifically to remove acrylic paints and adhesive tape on paper, and present many other possibilities.

A solvent not commonly used (or even heard of) in conservation, diethyl carbonate, is the solvent in the organogel that is very efficient at removing tape residue from works on paper. (We did have some problems using the gel for tape removal. It was excellent at removing the carrier from the adhesive but we didn't work with it enough to feel comfortable using it to remove the adhesive layer from the paper itself.)

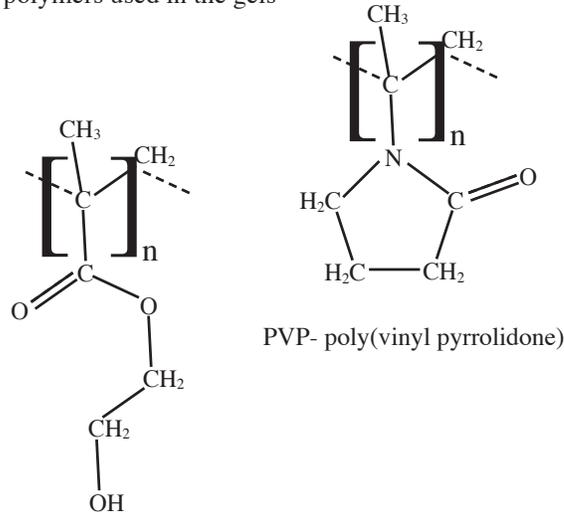
Nano-lime for cellulose based artifacts (sold as Nanorestore Paper®)

Another application of calcium hydroxide nanoparticles presented by Drs. Baglioni and Giorgi during the workshop was for the deacidification (or pH adjustment) of cellulose-based artworks (like paper, wood, or canvas). When cellulose ages, the fibers depolymerize, a process which is typically catalyzed by low pH. The calcium hydroxide particles of the nano-lime when applied onto paper's cellulose fibers react with carbon dioxide from the air, deacidifying and forming a calcium carbonate reservoir on the paper fibers.

Traditionally, aqueous solutions of calcium hydroxide have been widely used for deacidification. However, this treatment can lead to hydrolysis of the cellulose, mainly because of the strong alkaline conditions of the solution and the hygroscopic characteristic of the support. To overcome this reaction CSGI formulated nano-lime into non-aqueous solutions based on short chain alcohols.

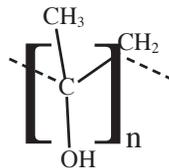
These dispersions of nano-calcium hydroxide particles in alcohol are kinetically stable so the particles don't agglomerate. The dispersed nano calcium hydroxide is sold in 5% and 10% concentrations in either ethanol or isopropanol. The nano particles of calcium hydroxide are carried into the porous paper and as the alcohol evaporates, there is rapid neutralization of the pH and the formation of a calcium carbonate alkaline reserve.

The polymers used in the gels

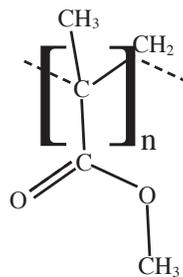


PVP- poly(vinyl pyrrolidone)

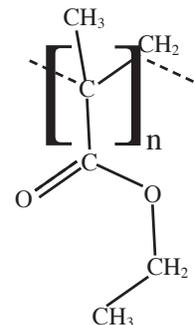
P(HEMA) - poly(2-hydroxyethyl methacrylate)



PVA - poly(vinyl alcohol)
[This is a nomenclature problem for conservators as we have traditionally referred to poly(vinyl acetate) as PVA while in the polymer world it is referred to as PVAc]



PMMA - poly(methyl methacrylate)



PEMA - poly(ethyl methacrylate)

Conclusion

All in all, the workshop was well organized, fun, and extremely informative. New materials and new concepts are always difficult to take in and internalize. Conservators can be hesitant to use new materials and processes, and this is a healthy trait. The hydrogels can be appreciated and used by even the most skeptical among our ranks.

Nano-lime for the consolidation of calcium carbonate-based materials is well established although conservators might have to acquaint themselves with its use and properties, as is the case with any consolidant. Paper conservators will have to play with the Nanorestore Paper and, as a group, probably revisit the whole concept of deacidification and alkaline reserves.

The microemulsions, however, represent a revolution in cleaning systems. It will take some experimentation to adapt them into our practice. Not only do these microemulsions make for a shiny new tool for our tool belt, but they represent a whole new mental model of the cleaning process.

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Membership

WAAC Welcomes the following new members and very late renewals.

The 2018 WAAC Membership Directory will be emailed as a pdf to all members.

Christina Bean, Jeanne Brako, Jennifer Bullock, Raina Chao, Abigail Duckor, Miranda Dunn, Sarah Freeman, Scott Gerson, Leslie Daniela Gonzalez-Pruitt, Becca Goodman, Amy Green, Dana Hemmenway, Suzanne Hoonbeck, Stephanie Hornbeck, Dale Kronkright, Gina Laurin, Donald Merritt, Liane Naauao, Nicole Passerotti, Pascale Patris, Alan Phenix, Emily Phillips, Marta Pinto-Llorca, Bettina Raphael, Sylvia Rasche, Catherine Reymond, Steven Scisenti, Landis Smith, Jude Southward, Deborah Trupin, Nancy Turner, Gina Watkinson, D. Robert A. Watson, Jill Whitten, and Justine Wuebold.

P. Baglioni, N. Bonelli, D. Chelazzi, A. Chevalier, L. Dei, J. Domingues, E. Fratini, R. Giorgi, and M. Martin. 2015. Organogel formulations for the cleaning of easel paintings. *Applied Physics A* 121 (3): 857-868.

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These are approximate prices from the website, which include the 22% VAT tax.

Nanorestore Plus® \$50 to \$70 / L,
depending on the formulation

Nanorestore Cleaning® all formulations \$70 / L
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Articles You May Have Missed

“Spanish Church Slammed over ‘Frightening’ Sculpture Restoration,”
BBC News, 06/26/2018

A lick of paint can do a lot to lift a drab interior, but when it comes to historic sculptures it turns out the job is best left to experts.

That is what a church in Spain discovered after hiring an arts and crafts teacher to freshen up a 16th century wooden sculpture of St George. Images shared on social media showed the warrior with a transformed pink face and bright coloured armour.

Cultural officials have blasted the botched attempt as “frightening”. “We cannot tolerate more attacks on our cultural heritage,” Spain’s art conservation association (ACRE) said in a statement. “It shows a frightening lack of training of the kind required for this sort of job.”

The parish priest in the northern town of Estella simply wanted the sculpture to be cleaned and did not intend for it to be restored, the Efe news agency reports. But the move has enraged local officials who are demanding to know why they were not informed of the church’s plans. “The council wasn’t told and neither was the regional government of Navarre,” the town’s Mayor Koldo Leoz told *The Guardian* newspaper. “They’ve used plaster and the wrong kind of paint and it’s possible that the original layers of paint have been lost. This is an expert job it should have been done by experts,” he said.

The group in charge of the project - Karmacolor - reportedly uploaded a video to Facebook showing every stage of the project but later deleted it.

How to Spot a Perfect Fake: The World’s Top Art Forgery Detective,
The Guardian, 06/18/2018

The unravelling of a string of shocking old master forgeries began in the winter of 2015, when French police appeared at a gallery in Aix-en-Provence and seized a painting of Venus, by the German Renaissance master Lucas Cranach the Elder.

Purchased in 2013 by the Prince of Liechtenstein for about £6m, Venus was the inescapable star of the exhibition of works from his collection. But an anonymous tip to the police suggested she was, in fact, a modern fake.

The painting’s seizure hoisted the first flag of concern about a wave of impeccable fakes. The quality of these jolted the market. The sums of money at stake in art have grown monstrous, and the incentive to be a proficient forger has soared. The technologies available to abet the aspiring forger have also improved. Naturally, then, the frauds are getting better, touching off a crisis of authentication for the institutions of the art world.

In December 2016, in a signal of how attribution scandals have spooked the market, Sotheby’s took the unprecedented step of buying Orion Analytical, becoming the first auctioneer to have an in-house conservation and analysis unit. Orion Analytical, a conservation science lab in Williamstown, Massachusetts, was run, and staffed almost solely by, James Martin, who has loaned his forensic skills to the FBI for many art forgery investigations. With Martin in the building, “the pictures and other objects moving through Sotheby’s now have a much higher chance of being checked”, Sotheby’s CEO Tad Smith said.

Last year, Martin analysed more than \$100m worth of artworks before they went under the hammer or into private sales. Sotheby’s employs him, in part, as a conservator, so he ministers to the health of the paintings and sculptures that pass through.

“What Colour is this Dress? Guggenheim Reveals Manet Painting after Three Years of Restoration,”
The Art Newspaper, 06/29/2018

A freshly-cleaned fashion statement by Édouard Manet goes back on view at the Solomon R. Guggenheim Museum in New York for the summer, after three years of research and restoration.

The free and expressive brushstrokes and bright colours of *Woman in Striped Dress* (1877-80), were hidden under two layers of discoloured varnish. The major restoration was carried out to prepare for the work’s inclusion in the travelling exhibition *Van Gogh to Picasso: the Thannhauser Legacy*, due to open at the Guggenheim Bilbao on 21 September.

The painting, found in the artist’s studio when he died, had been

dramatically changed over the years, including being cut down on the sides and trimmed at the top. Overpainting included an added signature and filling in the trellis-like background. Even the subject’s right eyebrow was changed during the earlier restoration from a raised arch to a more neutral and passive line.

These changes were presumably to make the painting more saleable, says Carol Stringari, the deputy director and chief conservator of the Guggenheim Foundation, who led the project. The restoration and research project, which involved over 25 specialists, began with intensive scientific analysis. This revealed that there was no preparatory sketching underneath and the composition was not altered.

Gillian McMillan, the associate chief conservator for the collection, gradually removed most of the varnish, initially using very thin, small pieces of tissue for control. This revealed not only the artist’s brushwork—“one of the most exciting things” for Stringari—but also that the dress is not black-and-white striped, but a greyish-white and black with deep blue-violet. Whether the unveiling will cause another viral dress sensation awaits to be seen.

“Peruvian Restoration Centre Rescues Art from Ruin,”
The Toronto Star, 07/04/2018

The old colonial palace high in the Andes and crowded with treasures from Peru’s bygone golden age feels more like an emergency room than a workshop for recovering damaged artwork. But sculptures of decapitated Roman Catholic saints, dismembered angels and charred paintings from remote churches across the spine of the Andes all find their way here, where a team of dedicated specialists works to restore them after catastrophic fires and centuries of neglect.

The facility, which opened in 2003, claims to be the only one of its kind operating in Peru and has already made major contributions to the country’s cultural heritage: Between 2015 and 2017 it rescued more than 500 paintings, sculptures, and ceramic pieces.

Cuzco was the capital of the ancient Inca Empire, and from the 16th to 18th centuries it became an epicentre

for Catholic-themed art under Spanish colonizers. Paintings from the “Cuzco School” reflect a rich blend of European influences with Indigenous imagery and homegrown artistic techniques that later spread throughout South America.

The team also restores delicate sculptures depicting Catholic martyrs made from wood and cloth that are often missing heads or arms. The workshop struggles to run on a shoestring budget of \$700,000 a year, said Nidia Perez, an art historian who heads the workshop. But the team never loses sight of its mission. “We are keeping alive the memory of Andean art,” she said. “We must fight every day to keep it from disappearing.”

“Mural discovered at old Moorhead High School,” *West Fargo Pioneer*, 07/12/2018

A nearly 80-year-old oil painting featuring early pioneer and American Indian life in the region has been discovered in the former Moorhead high school located in the heart of the city.

The mural – named “Making Camp on the Red River Trail,” according to the Minnesota Historical Society – was painted in 1939 by Lucia Wiley for the school as part of the national Federal Art Project of the Works Progress Administration, an agency created by President Franklin Roosevelt’s New Deal program.

Brian Cole, Moorhead orchestra teacher and school historian, recently stumbled onto the painting, which had been concealed over the years due to remodeling projects. Rita Berg, associate paintings conservator with the nonprofit Midwest Art Conservation Center in Minneapolis, inspected the work and conducted a light surface cleaning.

“Conservation Should Soon be a Warranted Profession,” *Times of Malta*, 07/20/2018

Conservators’ 15-year wait to be recognised legally was likely to come to a happy end this year. The Malta Association of Professional Conservator-Restorers (MAPCo-Re) was informed that the long-promised warrant system for the conservation profession would kick in by the end of this year.

The conservation professionals’

warrant is listed in the 2002 Cultural Heritage Act but has never been introduced. Amendments to certain aspects of the law, including granting the warrant, have been discussed in recent years.

According to their association’s president, James Licari, a warrant would ensure that the profession was acknowledged legally and that Malta’s collective cultural heritage was preserved for its various values – whether historic, religious, aesthetic or scientific – through professional, scientific methods as well as appropriate materials. Currently, the conservator-restorer may work on cultural heritage, but so can anyone else who may wish to appropriate the title without the necessary education

“CMA Keeps Ancient Skills Alive with Center for Conservation of Chinese Paintings,” *Cleveland.com*, 07/22/2018

After a 43-year career at the Shanghai museum, Zhu Pin Fang is sojourning at the Cleveland Museum of Art where she is passing on highly specialized knowledge of centuries-old techniques to Yi-Hsia Hsiao, the museum’s associate conservator of Chinese paintings.

The Cleveland museum recently completed a \$1.5 million challenge grant from the Andrew W. Mellon Foundation in New York by raising an additional \$1.5 million to establish a center in Chinese painting conservation.

“It’s fantastic,” said Clarissa von Spee, the Cleveland museum’s curator of Chinese art and head of the department of Asian art since 2016. Von Spee spoke in the museum’s Chinese art conservation lab while Zhu and Hsiao worked on the delicate task of preparing a layer of feather light xuan paper, made of sandalwood fibers, for mounting on the back of a 16th century scroll painting.

Remounting a Chinese scroll painting with fresh sandalwood paper is a complex, highly demanding task that needs to be done every century or so, said Per Knutas, the museum’s chief conservator. Knutas said has worked since 2014 to establish the Chinese painting conservation center, which he said was the second outside China after one established at the British Museum in London.

The museum will use income

from the \$3 million endowment to pay for yearlong renewable fellowships for mid-career specialists who will train under Hsiao. The center will focus first on conserving paintings in the museum’s own collection, and will then branch out to aid other institutions, Knutas said.

“St. Teresa Chapel Shines Again,” *Winona Post*, 07/30/2018

The Chapel of Saint Mary of the Angels in Winona will soon have a new face to show the public after a team from the Midwest Art Conservation Center (MACC) finished their restoration on the altar this past week.

In a five-day session, conservationists from MACC worked diligently to clean and restore the famed mosaic ceiling and marble altar of the chapel as the six-month project came to an end. The restoration project is one of the largest performed on the Saint Mary’s University-owned chapel since its creation in the early 1920s.

Saint Teresa was powered by coal, and over the years the coal began to darken the previously luminous glass and sculpture work. While there was very little actual damage to the building, the altar had seen better days.

Due to the scale of the project, planning started immediately. The first step was the survey, where conservators examined the building to see what the damage was and what would be needed to complete the restoration. After the survey, the main two focuses of the project were determined — the cleaning of the mosaic ceiling and the central marble altar. Originally, the plan was to do these steps in stages, with each taking a week, but eventually the plan shifted to fit both steps into the same timeframe.

“Gallery Owner Flooded with Offers for Rare Art he Found,” *New York Post*, 07/28/2018

The owner of a Chelsea gallery says he has been flooded with offers from around the world to purchase a trove of paintings he found abandoned in a storage locker.

The six abstract expressionist artworks by famed artist Willem de Kooning and a painting by modernist Paul Klee could fetch tens of millions of dollars at auction, said David Killen, the

owner of an eponymous Chelsea gallery.

After *The Post* broke the story of his remarkable discovery last week, Killen said he has received overwhelming interest from around the world, including a call from the renowned auction house Sotheby's, which he said had previously turned up their nose at his find. "Sotheby's had no interest when I first approached them, but after the article came out, they were suddenly interested," he said. "Well, it's too late."

Killen discovered the cache of abstract paintings last year after he paid \$15,000 for the contents of a storage locker in New Jersey that contained some 200 works of art. The paintings were once housed in the Manhattan studio of Orrin Riley, an art conservator who founded the conservation department at the Guggenheim Museum and later ran his own restoration business where he restored work by the Dutch-born de Kooning.

After Riley's death in 1986, his partner, Susanne Schnitzer, took over the business, but was killed by a garbage truck as she crossed a Midtown street in 2009. Some of the hundreds of paintings found in her studio were placed in a Ho-Ho-Kus, NJ storage unit by the executors of her estate.

"National Gallery Wins Grant to Help Save Art Conservation Skills," *The Guardian*, 08/01/2018

Essential conservation work on world famous paintings, including the equestrian portrait of Charles I in the National Gallery in London, in which Anthony Van Dyck transformed the diminutive monarch into a heroic emblem of power on a magnificent horse, will be used to train a new generation on how to prolong the life of historic canvases, through grants from the Getty Foundation in California.

The foundation is worried that the traditional skills of repairing or re-lining canvases, mending tears and preserving cracking or peeling paint, are being lost as a generation of conservators retires. The grants are intended to spread the understanding of how to conserve these works between institutions and countries.

"For years museum conservators have adopted a 'wait and monitor' approach to any major structural

intervention on canvas paintings," Antoine Wilmering, a conservation expert at the Getty, said. "But the danger is that once treatment can no longer be delayed, the experts with direct knowledge of lining and re-lining won't be there to offer help."

The National Gallery will receive more than £70,000, so that it can share the conservation process on the monumental Van Dyck. Since it came to Trafalgar Square in 1885 the huge painting has rarely been off display, but while the 17th century canvas is in relatively good condition, the more recent lining intended to protect it is failing and has to be replaced, and the paint surface has a web of cracks and splits.

Visiting conservators and a final international workshop will share in the work on the painting, which will include removing the old lining and applying a new one. The Getty intends to hold a major international symposium at Yale University in October 2019, the first since 1974.

"Restored Dioramas Take Center Stage in New Legacy Museum Exhibit," *Tuskegee University*, 08/02/2018

Tuskegee University's Legacy Museum is set to feature a new exhibit, "20 Dioramas: Brightly-Lit Windows, Magically Different," that specifically focuses on the display of cultural dioramas that were created in the 1940s by African-American artists.

The dioramas demonstrate the rich past of African-Americans, each depicting a scene of historical significance spanning from ancient Egypt through World War I. Tuskegee acquired the dioramas from the State of Illinois and the federal government to use as a vehicle to educate the public.

Originally, 33 dioramas were created for the 1940 Negro Exposition in Chicago; however, 13 were lost and Tuskegee was given the remaining 20. Because they needed serious restoration, the five-foot dioramas have been stored away from public view for decades.

By witnessing conservation work up close and in person, students can better understand the myriad aspects of restoration work. Studying the dioramas also introduces students to the practical aspects of art conservation, where they

learn how to remove decades of grime and dirt, and repair cracks in each diorama's surface.

"McAvoy on Preservation: Conservation Starts with a Story — Hollywood Craftsman had One in 1940," *Larchmont Chronicle*, 08/02/2018

In 1940, Joe Pellkofer had a story he wanted to tell. The owner of the Superior Cabinet Company and his 25 artists and craftsmen knew Hollywood thoroughly, and he thought that in addition to people who were able to see Hollywood for themselves as tourists and residents, others might wish to see a three-dimensional version of a landscape they had grown familiar with through the movies and travel brochures.

He began to create "Hollywood" in miniature, a scale model of its streets and buildings on a platform 11 feet by 12 feet. He surrounded the 45 main "blocks" (over 450 buildings) from Melrose to the hills and La Brea to Gower with a "cyclodrama mural" of the Hollywood Hills.

The effort took four years. Every elevation of the buildings was photographed for detail and scale. Municipal maps were used to obtain street directions and alignments. He spent almost \$50,000 on photos alone.

Completed in late 1945, the model made its official debut in Hollywood on Jan. 4, 1946, to glowing reviews. The exhibit traveled from 1946 to 1948. Pellkofer began to tour the country with his creation, exhibiting it at World Fairs and other venues.

Hollywood Heritage acquired "Hollywood" and another miniature, the "Paramount Studios Lot," recently. Donna Williams, president of Williams Art Conservation Inc. and a board member of Hollywood Heritage, is in the process of cleaning and conserving these treasures. The display is housed in Hollywood Heritage's "De Longpre Annex".

"A Jackson Pollock Painting Gets A Touch-Up — And The Public's Invited To Watch," *NPR*, 08/06/2018

From March 4 to September 3, conservator Chris Stavroudis is part of the exhibition Jackson Pollock's Number 1, 1949: A Conservation Treatment at

The Museum of Contemporary Art, Los Angeles. Number 1, 1949, is a swirl of multi-colored, spaghettied paint, dripped, flung and slung across a 5-by-8-foot canvas. It's a textured work — including nails and a bee— and in the nearly 70 years since its creation, it's attracted a fair bit of dust, dirt and grime.

That's where conservator Chris Stavroudis comes in: His job is to clean the painting using swabs, solvents, and tiny brushes. For the last several months, he's been hard at work, once a week, in full view of the public, in a gallery at The Museum of Contemporary Art, Los Angeles.

Pollock used all sorts of paints — oil paint, house paint, car paint, radiator paint — and they all aged and got dirty in different ways. Working with the Getty Conservation Institute, Stavroudis did tests to see what kind of cleaning was needed. Stavroudis suspects the bee was unintentional (it probably just flew into the wet canvas as Pollock painted), but the nails weren't. Pollock added them for texture.

Art conservation is as much detective work as aesthetic exercise — and a nail that fell out of the painting gave clues to Pollock's thinking. In the tiny indentation where a nail had been, Stavroudis saw a hairline of bright orange, under many dribbles of white. "Everyone always thinks of him as just slopping paint around," Stavroudis says, "but he looked at it, decided the orange was too bright, and took it down."

This is the first time any conservation work has been done on Number 1, 1949, and because it's a 20th century work, it's harder to conserve than, say, a Rembrandt. With new, 20th century materials, however, there's much less conservation scholarship; they're still in the process of learning what happens when the swab meets the paint.

“‘A Menace to Life and Limb’: The Artworks that Have Injured – And Killed,” *The Guardian*, 08/21/2018

Anish Kapoor's art installation *Descent Into Limbo* is a big, black hole, too deep for viewers to be able to see the bottom. Or is it merely a black circular painting?

You stand on the edge of the

dark nothingness, fascinated and perhaps a little tempted to reach out a foot and test it. You could call it a meditation on the sublime. Or an accident waiting to happen.

Descent Into Limbo was first seen in 1992, but the inevitable accident has finally come. A visitor to Kapoor's show at the Serralves Museum in Porto, Portugal, had to be taken to hospital after ending up inside what is in fact a 2.5-metre-deep hole.

When Doris Salcedo cut a crack through the floor of Tate Modern's Turbine Hall in London in 2007, visitors could not resist putting a foot or a leg inside. Quite a few injuries resulted from playful antics or people tripping up. When Carsten Höller installed giant spiral slides at the same museum in 2006, thousands took the plunge and a few got bruised.

Far more seriously, Christo and Jeanne-Claude closed their 1991 installation, the *Umbrellas*, when high winds caused one of its huge beach umbrellas to crush a 33-year-old California woman to death and injure several others. We want art to be dangerous, but not that dangerous. Or do we?

It has been recognised since the Romantic age that some of the most powerful imaginative experiences derive from terror, horror and awe. The 18th-century thinker Edmund Burke called this dark aesthetic "the sublime". He observed that real, even life-threatening, danger will always trump mere pictures of horror.

Today, artists teeter over that precipice. Installation art can put us at real risk. Luckily, the victim of Kapoor's black hole is said to be doing well in hospital. Most injuries caused by art are, mercifully, mild. Yet something in us is drawn to the void, the precipice, the crack in the floor. If art couldn't hurt us, it wouldn't move us.

“The Guggenheim Gets \$750,000 to Help Answer Knotty, Existential Questions About the Nature of Conceptual Art,” *ArtNet News*, 08/29/2108

The Solomon R. Guggenheim Museum has embarked on the third and final phase of a years-long collaboration

with the Andrew W. Mellon Foundation that the *New York Times* has described as "one of the most ambitious conservation projects ever to address the deep uncertainties raised by Minimalism and Conceptualism."

The endeavor marks the first time the field has sought to reach consensus on how to display and preserve artwork that might otherwise exist only as a diagram or an idea. Now, the Mellon Foundation is awarding the project a hefty grant of \$750,000.

The so-called Panza Collection Initiative has been quietly chugging along since 2010 and centers on the study of the most perplexing, fragile, and intellectually confounding works the museum purchased in the early '90s from controversial Italian collector Count Giuseppe Panza di Biumo. As part of the initiative's third phase, the museum will publish an archive of all its research and interviews online and convene a symposium next spring in partnership with the Los Angeles-based Getty Conservation Institute.

The Guggenheim also plans to publish a book of its research and conservation findings in 2020. The overall project "was devised as a direct collaboration between the field of conservation and the field of art history and with a curatorial perspective," said conservator Francesca Esmay. In addition to interviews with artists, the endeavor involved in-depth archival research, conversations with studio assistants and fabricators, and an ongoing exchange with an international advisory committee of conservators and historians.

Although the Panza Collection includes 350 works in all, the museum has narrowed its focus to the work of seven artists: Dan Flavin, Robert Irwin, Donald Judd, Robert Morris, Bruce Nauman, Lawrence Weiner, and Doug Wheeler.

“Third ‘Restoration’ of Catholic Artwork in Spain Sparks Outrage, Hilarity,” *Catholic News Agency*, 09/10/2018

In the third known act of egregious artistic restoration of Spanish Catholic art in recent history, a 15th century statue of Christ and Mary has been given a fresh - and loud - coat of

paint, simultaneously sparking hilarity and outrage online.

The wooden statue, from a chapel in the village of El Ranadoiro, about 35 miles west of Oviedo, depicts Christ on the lap of who appears to be his grandmother, St. Anne, with his mother the Blessed Virgin Mary standing to the side. The figures, once plain wood, now sport bright colors, with St. Anne in a hot pink veil and sky blue robes, Christ in lime green, and Mary in a light turquoise veil and deep red robes.

Each face dons lined eyes and bold red lips; St. Anne's fingernails are painted a muted pink. Amateur artist and local resident Maria Luisa Menendez said she offered her talents to the parish priest, who gave her permission to paint the statues.

The saintly snafu has some comparing Menendez' work to that of Cecilia Gimenez, who 'restored' the now-infamous Ecce Homo painting in Spain in 2012. Her fuzzy, monkey-like depiction of Christ spawned its own SNL skit and a comedic tributary opera, and continues to draw thousands of visitors a year from all over the world. Spanish art conservation group ACRE bemoaned the botching of yet another piece of historic Spanish art.

“Art Conservation Using Saliva Wins Chemistry Ig Nobel,” *Chemistry World*, 09/14/2018

This year's chemistry Ig Nobel prize has been awarded to three Portuguese conservation scientists who showed that human saliva is a good cleaning agent for paintings and historical artefacts.

Paula Romão, Adília Alarcão and César Viana's 1990 paper revealed how the trio collected saliva and measured how effective it was at removing dirt from 18th century gilded sculptures. They note that conservators have long been using their own saliva in preference to other solvents when working with delicate materials such as gold leaf and ceramics.

'I know that it seems quite improbable, but human saliva is indeed an effective cleaning agent for surfaces like paintings, sculptures and gilded wood. But don't try to use it on your kitchen counters,' Romão said in an

acceptance video that was played at the awards ceremony at Harvard University.

The cleaning action is in part due to an enzyme in saliva, α -amylase, which breaks down starch into simple sugars.

The Ig Nobel prizes are awarded annually to celebrate improbable scientific research across a variety of disciplines. Among this year's winners are Marc Mitchell and David Waringer, who were awarded the medicine prize for using roller coaster rides to hasten the passage of kidney stones, and an international team who won the biology prize for demonstrating that wine experts can smell the presence of a single fly in a glass of wine.

“Specialists Conserve Capitol artwork,” *News Tribune*, 09/23/2018

Two women from Ohio are working hard to make sure Missourians can enjoy murals — and other artwork — in the Capitol for a long time to come.

Wendy Partridge and Andrea Chevalier work for the Cleveland, Ohio-based ICA Art Conservation Center, a nonprofit regional center. Both women are fellows in the American Institute for Conservation of Historic and Artistic Works, and both have been doing art conservation work for around 35 years.

They're in Jefferson City now, working on the “Power From the Hills” mural by Ralph Chelsea Ott that's in the northwest corner of the second-floor mezzanine area overlooking the Capitol Museum. Their work is part of a three-phase contract between Missouri's State Capitol Commission and the ICA, Commission Chair Dana Rademan Miller explained.

Miller said the restoration work is important, because: “We have this amazing collection of art” created by the first Decoration Commission bought with money left-over from construction of the Capitol. “It's literally an art gallery” as well as a museum housed in the Capitol.

Miller said it's clear the mural suffered water damage over the years, although the source of that water isn't known. Partridge said, “This painting has had problems from the get-go. “It may have been because of the materials the artist chose, because all of the other murals in the Capitol are in really, very

good condition.” “This one, we think, probably has had flaking problems from the beginning,” she said. “As we're cleaning up our adhesive residues, we're uncovering old areas of damage that were over-painted in the past.

“Marina Abramovic Attacked with Painting at Exhibition in Florence,”

The Art Newspaper, 09/24/2018

An amateur artist tried to attack Marina Abramovic after one of the opening events for her exhibition at Palazzo Strozzi in Florence yesterday (23 September), the museum has confirmed.

According to local press reports, a 51-year-old Czech man hit Abramovic over the head with a painting on paper he had made of her that was framed but without glass. Police reportedly said that the man had been involved in similar situations before, but released him because the artist did not want to press charges.

Abramovic told Italian media that she had smiled at the man, who approached her while she was leaving Palazzo Strozzi after a book signing event with fans, because she believed he was offering her the “very distorted” portrait as a gift. “In a split second I saw his expression change and become violent, as he came towards me very quickly and forcefully,” she said. “Danger always happens quickly, like death itself.” Despite the shock, she was not injured.

“New Research Finds that Caravaggio Died of Sepsis, Not Syphilis,”

Hyperallergic, 09/21/2018

Before establishing a certain cause of death for the Baroque painter, scientists first had to find his body. The truth was hidden in his teeth.

A serial gambler with a penchant for prostitutes, booze, and brawls, art historians have largely agreed for the last four centuries that Caravaggio died of syphilis in 1610.

However, new research conducted by a team of seven French and Italian scientists at the IHU Méditerranée Infection Institute of Marseille and published in one of the world's leading peer-reviewed medical journals, *The Lancet*, has concluded that the irascible

artist ultimately succumbed to an infected sword wound.

The killer, in this case, was staphylococcus. Researchers were able to detect the bacteria through microbes extracted from the remaining blood vessels within the Baroque artist's teeth.

“Turin’s Chapel of the Holy Shroud—Almost Entirely Destroyed by Fire—Reopens after €30m Restoration,” *The Art Newspaper*, 09/27/2018

The Chapel of the Holy Shroud in Turin reopens 21 years after it was almost entirely destroyed by fire and 28 years after it was closed because a chunk of marble had fallen from a cornice.

A masterpiece of Baroque architecture, designed by the mathematician priest Guarino Guarini, it was commissioned in 1668 by the Savoy ducal family to house its most prestigious possession—the linen cloth believed to have wrapped the body of the dead Christ.

The origin of the fire that raged throughout the night of 11 April 1997 remains a mystery. It burned especially fiercely because the chapel, which had just been restored, was still full of wooden scaffolding.

The long delay in restoring the chapel began with a lengthy judicial seizure of the site while fruitless attempts were made to find out whom to blame for the fire. In the absence of architectural drawings or other documents, this was followed by a detailed analysis of the daring structure of the building, which boasts a self-supporting dome with interlocking marble blocks. There was then a lengthy period of disagreement over how much of the original material to reuse.

The decision was finally made to replace 1,150 badly damaged elements and consolidate the remaining 4,000. The quarry at Frabosa in Piedmont, from which the black and grey marble was originally extracted, was reopened for this purpose. The restoration work has been a state-of-the-art project in which the damaged fragments have been incorporated and then patinated so that they blend in with the new marble.

As Luisa Papotti, the superintendent for archaeology, fine arts and landscape in the Piedmont region,

says: “This has not been a rebuilding, but a conservation project.”

“National Museum in Rio Starts Rebuilding Efforts with Temporary Exhibitions,” *The Art Newspaper*, 10/01/2018

Less than a month after a fire consumed the National Museum in Rio de Janeiro on 2 September, efforts are underway to revive the institution. The museum recently installed tents outside of the charred building to hold a temporary outdoor exhibition of pieces from its collection that were stored in other facilities in Brazil, totalling around 1.5 million objects.

It has also launched a crowdfunding campaign to raise 50m reais (\$12m) to restart a programme that lends objects from its collection to local schools, and is nearly halfway towards its goal.

The director of the museum Alexander Kellner has announced that organisers will consider installing a more permanent exhibition space outside the museum to host rotating public exhibitions.

As for the pieces still trapped in the debris of the destroyed institution, Kellner says the two major concerns are rain, which would further deteriorate salvageable objects, and looting. Unesco estimates that it will take at least a decade to restore the museum and its collection.

Although officials are still tallying the remaining pieces, the museum has confirmed that the Bendegó meteorite, the largest ever discovered in Brazil, and several other space rocks survived the fire—along with the fish who lived in the fountain of the central atrium.

Around 260 indigenous Brazilian artefacts housed in the museum also managed to escape damage, since they were lent to the Memorial of Indigenous Peoples museum in Brasilia for an exhibition that opened five days before the fire.

“Death Triumphs: Museo Del Prado Completes Challenging Two-Year-Long Bruegel Restoration,” *The Art Newspaper*, 10/02/2018

It has been one of the most challenging restorations undertaken by

the Museo del Prado in recent years. The Triumph of Death (1562-63) by Pieter Bruegel the Elder, returned to the Madrid museum's walls at the end of May. Following almost two years of conservation.

The Triumph of Death has regained its structural stability and original colours—transparent in the background and extraordinarily vivid in the foreground. “The work required a complete cleaning, which was particularly complex because of the thinness of the original layer of paint compared to the thickness of the retouches—a real crust,” says Maria Antonia López de Asiain, the conservator who restored the surface of the painting.

With the aid of copies created by the painter's two sons and the use of infrared reflectography, it was possible to eliminate the areas of repainting and reintegrate lost details. The removal of varnish applied during previous interventions has restored the original colours, recovering the characteristic bright tones of the blues and reds and the depth of the landscape.

The conservator José de la Fuente, meanwhile, restored the painting's support, which is made up of four horizontal oak panels. He levelled the cracks in the top panel and removed a cradle that had constrained the natural hygroscopic movements of the wood. A beech stretcher was designed to match the curvature of the panel and attached to the painting using a reversible system of nylon screws and stainless-steel springs..

“Conservation Work of Historic 1965 Mural Begins at CSULB,” *Long Beach Post*, 08/13/2018

Conservation work began today on the large 22-by-21 foot mural painted by Canadian artist Rita Letendre for the 1965 California International Sculpture Symposium at Cal State Long Beach.

Microscopic samples of the paint will be taken to the Getty Conservation Institute in Los Angeles to analyze in preparation to conserve the mural next summer. The University Art Museum, in partnership with The Getty Conservation Institute and RLA Conservation of Art & Architecture, will lead the project as the seventh artwork on campus to be restored through its conservation initiative started in 2014.