

PHOTOGRAPHIC MATERIALS GROUP BIANNUAL WINTER MEETING

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ABSTRACTS AND BIOS

Building a Collection: The History of the Hallmark / NAMA Photography Collection

The Hallmark Photographic Collection at the Nelson-Atkins Museum of Art is one of the world's most significant holdings of its kind. Begun in 1964, it was developed as a private collection and was featured globally in a variety of books and traveling exhibitions. Transferred to the NAMA in late 2005, it providing the basis for the museum's Department of Photography and our active current public program. Keith Davis, who has overseen the growth of this collection for nearly 40 years, will discuss some of the opportunities and strategic decisions involved in collection building.

Keith F. Davis is Senior Curator of Photography, Nelson-Atkins Museum of Art, Kansas City, Missouri. He received his B.S. degree (1974) from Southern Illinois University and his M.A. (1979) from the University of New Mexico. In 1978-79 he held a research internship at the George Eastman House, Rochester, NY. He guided the growth of the Hallmark Photographic Collection from 1979 to 2005. When this was transferred to the Nelson-Atkins Museum of Art in late 2005 he became the museum's founding curator of photography.

Davis has curated nearly one hundred exhibitions and is the author of nearly thirty books and catalogues, including *An American Century of Photography: From Dry-Plate to Digital* (1999); *American Horizons: The Photographs of Art Sinsabaugh* (2004); *The Art of Frederick Sommer* (2005); *The Origins of American Photography: From Daguerreotype to Dry-Plate* (2007); *The Photographs of Homer Page* (2009); *Timothy H. O'Sullivan: The King Survey Photographs* (2011); *The Photographs of Ray K. Metzker* (2012); *Emmet Gowin* (2013); *Multitude, Solitude: The Photographs of Dave Heath* (2015); and *The Life and Work of Sid Grossman* (2016).

Davis received an NEH Fellowship in 1986, and was included in James Stourton's *Great Collectors of Our Time: Art Collecting Since 1945* (2007). He has lectured extensively and taught the history of photography at the undergraduate and graduate levels from 1978 to 2005.

The Lievan Gevaert Tower: a New Low Energy Climate Storage Facility for the Collection of the FOMU

The Fotomuseum was founded in 1965 and originated from the photo company Agfa- Gevaert in Mortsel (Antwerp, Belgium). Its beautiful photography, book and photographic equipment collection has grown steadily over the years and the improved conservation of the objects created the need for additional storage space. In 2009 a first design for a new storage facility was presented.

In 2012, a workshop of Tim Padfield and Poul Klenz Larsen on low energy climate control in museum storages and archives in Brussels, 'The Guide to Sustainable Preservation Practices for Managing Storage Environments of the IPI' (July 2012) and the conference 'Climate for Collections - Standards and uncertainties' (November 2012) gave new insights on the use of the ISO standards and made FOMU reflect on the more classic approach towards the construction of storage facilities for museums. Not only did we want to preserve our collections in the best possible way, we also wanted to reduce or limit the risks connected to large HVAC-systems and minimize the use of energy in respect for the environment.

The low energy climate concept demanded a totally different approach towards the design of the building. It could be used for storing books, photo albums, framed works, photographic equipment, archives and photographs, but due to their very specific conservation issues, film negatives, color photographs and digital prints could not be included. They should be kept in cool or cold storage.

In order to 'test' the new concept, from 2013 to 2015 two dynamic simulation studies were conducted: a study to define the optimal building envelope and a study on hygrothermics. They provided data on temperature and RH to determine the appropriate building materials to assure the required insulation and air-tightness of the building. They also gave information on the estimated power consumption and the effect of certain activities of the collection department on the climate of the depots.

This research resulted in a new storage facility that will be finished in December 2016. Temperature and RH can gradually fluctuate between 13 and 21°C and 40 and 55 % RH throughout the year. Because of the specific building envelope it is rather unlikely that these limits will be reached or exceeded.

If this should happen, every depot is provided with a small energy efficient climate installation to keep the storage climate in balance. The air in the storage will be recirculated every 24 hours through a carbon filter. Lighting is done using LED lights activated by motion detection. Activities in the storage areas are limited to 8hrs per week divided over two staff members.

In 2017 the building will remain 'empty' to monitor air quality and changes in temperature and RH throughout the year. Only packaging materials will be stored in the new depots. The humidity content of the packaging material will be measured in order to see the interaction between the storage rooms and the materials.

Ann Deckers studied photograph conservation and cultural management at the university of Antwerp. She has been working as a photograph conservator in the FOMU since 2000 and became head of collections in 2012. She is responsible for the coordination of the collection department and collection exhibitions. She coordinated the design and construction of the new e-depot and collection storage facility of the FOMU. Since 2008, she is also teacher at the library School VSPW in Ghent, where she gives workshops on the preventive conservation of analogue photographs and digital prints.

Hidden Treasures in the Photographic Technology Books at the Library of Congress

In 2012, the Library of Congress general collections holdings under the “TR classification” or photographic technology were examined with the goal of transferring rare materials to the Rare Book and Special Collections Division. This review, conducted by the author, revealed that not only were there incredibly rare manuals that warranted transfer, but also a significant number of 19th and early 20th century manuals that contained original photographic and photography related samples. Among more esoteric samples such as vignetting papers, photographic backdrop cloths, and retouching paint palettes, a large portion of the samples consisted of photographic prints on identified proprietary papers of known date. It became clear that these samples could provide conservators and scientists with incredible materials resource if properly described and organized. This paper will highlight the types of materials found in the collection, describe the methods for “cataloguing” them, and how this information might be of use in materials studies. In addition, it was found that the sample prints had variations from one book to another even within the same year/edition. Thus, we hope that other institutions with similar holdings will examine and catalogue their books to further expand the data set, allowing for more statistically broad studies in the future.

Adrienne Lundgren, Senior Photograph Conservator

Setting the Tone: Platinum Toning of Silver Photographs

From the earliest experiments in silver-based photography, methods have been investigated to increase the permanence and manipulate the tones of silver images. In 1856, Ernesto de Caranza published the first example of a platinum-containing toning bath for salted paper prints. However, platinum toning did not gain popularity until the introduction of William Willis’ Platinotype process and the availability of more effective chemicals in the 1870s. Many amateur and professional photographers, including Alfred Stieglitz, published their own platinum toner recipes and tips in specialty journals as this exploratory phase continued, culminating in a widely cited treatise by Lyonel Clark first published in 1890. In subsequent decades, a great variety of toning bath compositions were proposed, which used different concentrations of platinum and other additives to achieve the desired tonal range.

Despite the wealth of period literature promoting the process, relatively few examples of platinum-toned silver prints have been identified in museum collections. The present research project aims to recreate historic recipes from published sources, focusing on the salted paper print. Subsequent analyses of simulacra will yield a better understanding of platinum’s use as a toning element in early

photographs. A brief overview of documentary evidence relating to toning will be presented along with the preliminary results of the analytical investigation. Ultimately, analytical results will be tied to visual observations of prints, with the goal of contributing to process identification in the field and aiding in the elucidation of toning processes used by early photographers.

Ronel Namde is a Photograph Conservator at the National Gallery of Art in Washington, DC. She graduated from the Winterthur/University of Delaware Program in Art Conservation in 2015 with a specialization in photographic materials. She received her BA in Anthropology from Yale University in 2007 and worked at the Yale Library for five years as a conservation technician. Her work there involved both the general and special collections, including materials from the Beinecke Rare Book & Manuscript Library. She did her third-year internship at the Weissman Preservation Center after completing summer internships at the Arab Image Foundation in Beirut, Lebanon and the United States Holocaust Memorial Museum. At the National Gallery she has been able to work on upcoming exhibition, loans, and collections maintenance, and participate in ongoing research on platinum and palladium photography thanks to a grant from the Andrew W. Mellon Foundation.

Joan M. Walker received a Ph.D. in Inorganic Chemistry from Indiana University in 2015, where her research focused on the interaction between metallic nanoparticles and proteins under visible light excitation. After a brief internship in the Conservation Science Department at the Indianapolis Museum of Art, she was hired as a photographic materials scientist at the National Gallery of Art. Funded by the Andrew W. Mellon Foundation, her current research activities aim to gain a better material understanding of the creation and preservation of photographs from the early photographic era. Her interest in conservation dates back to her undergraduate career at Washington University in St. Louis (B.A., summa cum laude, Chemistry and Art History) and subsequent position as conservation technician at the Indiana Historical Society.

Edward Weston's Platinum and Palladium Photographs

Edward Weston is recognized as a pioneer of the Modernist movement in photography, and largely as one of the greatest American photographers of the 20th century. He is best known for his still lifes and nudes meticulously printed on gelatin silver developed-out papers. However, early in his career Weston favored pre-manufactured platinum and palladium papers. Photographs Weston made between 1913 and 1923 reveal a Pictorialist aesthetic, which he later came to reject in favor of Modernism's sharp focus and straight style. He famously destroyed journals and materials from these early years, and his published *Daybooks* do not include journal entries prior to his move to Mexico in 1923. Consequently, Weston's early career has remained a mysterious part of his life and the photographs have received less consideration.

The Lane Collection at the Museum of Fine Arts, Boston, houses approximately 2,300 photographs by Edward Weston, with forty examples of his early platinum and palladium prints made before his move to Mexico in 1923. Given the lack of information about Weston's printing practice between 1913 and 1923, a survey was conducted to characterize and document these early photographs in the Lane

Collection. The prints and were examined visually for clues about manufacture, and with X-ray fluorescence spectroscopy (XRF) to ascertain the image-forming elements. Historical sources of information were consulted to better understand Weston's working habits, and to attempt identification of his pre-manufactured platinum and palladium papers.

During the survey an unusual preservation problem was noted associated with Weston's mounting method. Areas of altered tonality were observed on the recto of eleven photographs relating to the location of the mounting adhesive on the verso. XRF spot analysis was used to investigate the source of the tonal difference. Additionally, adhesive samples were taken from eight unmounted prints to analyze by Fourier transform infrared spectroscopy (FTIR), matrix-assisted laser desorption/ionization (MALDI), and gas chromatography-mass spectrometry (GCMS). Analytical results were then used for mock-up experiments on sample platinum and palladium prints.

This paper will present the results of analytical testing of the Lane Collection Edward Weston platinum and palladium prints made between 1913 and 1923, as well as observations on his printing and processing techniques. Results of the adhesive testing and mock-up experiments will also be discussed, along with information discovered in historical documents. The breadth and depth of the Lane Collection is an unusual opportunity to look both microscopically and macroscopically at Edward Weston's printing practice from a period of his career that is not well documented.

Margaret Wessling in the Claire W. and Richard P. Morse Fellow for Advanced Training in Conservation of Works of Art on Paper at the Museum of Fine Arts, Boston. She holds an M.A. in art history and an Advanced Certificate in the Conservation of Historic and Artistic Works from the Institute of Fine Arts at New York University, and a B.A. in art history and studio art from Columbia University.

The Alfred Stieglitz Collection: Photographs Conservation and Art Historical Data goes Digital at the Art Institute of Chicago

The 244 photographs that make up a portion of the Alfred Stieglitz Collection at the Art Institute of Chicago are among the treasures of the museum's collection. Yet, unlike the equivalent collections at the National Gallery of Art or the Metropolitan Museum of Art, this collection of photographs had never been systematically researched or presented as a whole. This changed in 2016, with the launch of the Alfred Stieglitz Collection: Photographs website (<http://media.artic.edu/stieglitz>), an innovative approach to presenting a sub-section of the museum's holdings.

Collaboration between digital, conservation and curatorial departments resulted in a user-friendly website that presents information at levels meant to appeal to multiple audiences. For the casual browser, quick but scholarly definitions of relevant artists, processes, journals, and galleries related to the photographs provide basic context. For researchers, and those interested in learning more, links to exhibition catalogues, similar prints, and even prints from the same negatives in other institution's collections offer art historical resources. Detailed material and elemental analysis of 44 prints presented in specially designed PDFs (including results of XRF spectrometry, IR photography, FTIR spectrometry and UV radiation induced visible fluorescence) offers an invaluable resource for conservators and conservation scientists interested in Pictorialist photography. All of this was built using a modified Wordpress template, utilizing that platform's intuitive content management system to allow for easy uploading and updating of the data and images.

This presentation will address the unique intersection of art history, conservation and digital experience that this project demonstrates, and hopefully inspire others to think closely about how to make technical and art historical research about institutional collections public in a user-friendly way.

Ariel Pate is Assistant Curator of Photography at the Milwaukee Art Museum. Previously, she was a curatorial assistant in the department of photography at the Art Institute of Chicago, where she was responsible for the creation of The Alfred Stieglitz Collection: Photographs site, a website which presents art historical and materials research on the unique set of photographs given by Stieglitz's estate to the museum. She received a MA in Curatorial Studies from the Staatliche Hochschule für Bildende Künste Städelschule and J.W. Goethe University, in Frankfurt, Germany.

The Conservation Treatment of A Convex Crayon Enlargement Portrait after a failed decoupage attempt

This paper will present the course of treatment that was undertaken at the request of the owner of the portrait. As a child the owner witnessed his mother's attempt to preserve the broken convex portrait of Grace Angeline (Boyd) Glenn. According to the owner's records the original portrait was taken in 1908, the crayon enlargement was made in 1925, and the attempted decoupage took place in 1965. The treatment involved reversing the attempted decoupage, full treatment to address assorted stains, reforming the convex shape, and necessary cosmetic compensation to reintegrate and recover lost aesthetic qualities.

Thomas M. Edmondson, Heugh-Edmondson Conservation Services, LLC, Kansas City, Missouri

What Is It: Empirical Research into the Art of Bleaching Crayon Enlargements

As Robert Feller wrote in 1982, "One of the first things that one should ask in any bleaching problem is: What is it—what is the chemical substance that you are trying to bleach?" Three decades later, this question is still valid. The technologies of paper manufacture, chemical structure of cellulose, and various agents of deterioration impact what the conservator encounters at the bench.

Heugh-Edmondson Conservation Services, like many private practices and regional centers, is frequently asked to treat crayon enlargements. These objects are usually in very poor condition, requiring extensive treatment often involving washing and some type of bleaching. These treatments have proven to be successful, leading conservators to question the established belief that papers used for crayon enlargements are of poor quality and to ask themselves anew, "What is it?"

This paper will present examples of crayon portrait treatments, describe the premise and organization of the project, provide some preliminary results, and discuss directions for further inquiry.

Lisa Duncan is a paper and photograph conservator in private practice in Seattle. She holds a MS in Art Conservation from the Winterthur/ University of Delaware Program in Art Conservation. She is a Professional Associate of the American Institute for Conservation and a member of the Western Association of Art Conservation. She completed internships at the J. Willard Marriott Library in Salt Lake City, UT; The Museum of Fine Arts, Houston; The Center for Creative Photography in Tucson, AZ; The Weissman Preservation Center at Harvard; Historic New England in Boston, MA; and in the private

studios of Heugh-Edmondson Conservation Services in Kansas City, MO and Silverpoint Art Conservation in Albuquerque, NM. Her practice in the Northwest was started in Eugene, Oregon in 2009 and moved to Seattle, Washington in 2013.

Francesca Woodman's BFA Thesis: Conserving a Work of Art for An Active Archive

Francesca Woodman attended The Rhode Island School of Design (RISD) from 1975-1979. Her BFA thesis was composed of a light-weight tissue paper support, about 30" x 20", and twenty-one 3 ½" x 5" inter-positive transparencies attached to the front with pressure-sensitive tape. The tissue paper was heavily annotated with ball point pen inscriptions and was folded multiple times to fit into a 9" x 12" grey mailing envelope with a photographic self-portrait attached to the reverse with pressure-sensitive tape. This piece was inherently quite fragile and after 40 years in RISD's Fleet Library archive, the tape had become brittle, discolored and fallen off. Eighteen of the twenty-one transparencies had detached and were lying loose in the storage box and the residual adhesive had locally yellowed the paper support.

Woodman's thesis is a favorite piece among RISD students and access to the object is in high-demand. In 2006, Andrew Martinez, archivist at the Fleet Library, RISD brought Francesca Woodman's BFA thesis to NEDCC as it was becoming increasingly difficult to handle and was in desperate need of conservation; however, there was no funding to pursue this project at that time.

In recent years there has been a resurgence of interest in Francesca Woodman's work. Her oeuvre is made all the more powerful and poignant by its scarcity since she took her own life in 1981 when she was just 22 years old.

The thesis conservation project got the green light in early 2015 and the approach was two-fold: to preserve the thesis' original essence and provide safe access to the object for the researchers and RISD students. Working closely with the archivist, Francesca's thesis was stabilized by treating the original tapes, tissue support and re-adhering the transparencies. A customized housing was created for the thesis to minimize handling and to make it easily accessible to RISD students. Detailed digital images were taken and a high quality facsimile print was made to help further increase safe access and display of the thesis. This presentation describes our discussions with the archivist, the conservation process, and outcomes of the project, both intended and unexpected.

Monique Fischer has specialized in the conservation of photographic materials since 1994. In collaboration with the Image Permanence Institute, she was awarded a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences in 1997 for the development of A-D Strips, a tool that detects deterioration in acetate film. Monique lectures extensively on photograph conservation in the US and abroad, and has been awarded two fellowships by the J. Paul Getty Trust to investigate the longevity of digital output media. She is a Fellow of the American Institute for Conservation of Historic and Artistic Works (AIC). Monique received a B.A. in Chemistry from Smith College, and a M.S. in Art Conservation with a concentration in Photographic Materials from the Winterthur/University of Delaware Program.

Amanda Maloney has worked in the field of photograph conservation since 2011. She received Masters Degrees from the Winterthur/University of Delaware Program in Art Conservation, and the program for Photographic Preservation and Collections Management at Ryerson University/George Eastman House. She gained extensive experience working with photographic materials as a conservator at The Better Image®. She has also completed conservation internships at The Gatineau Preservation Center for the Library and Archives of Canada, The Sherman Fairchild Photograph Conservation Laboratory at the Metropolitan Museum of Art, and at the Fotorestaurotatie Atelier of Clara von Waldthausen (Amsterdam). In addition to treatment Amanda has participated in surveys, outreach, research, and workshops pertaining to the preservation of photographic materials. She is a member of the American Institute for Conservation of Historic and Artistic Works (AIC).

The effects of solvents on primitive color transparencies

This paper will discuss the effects of solvents on primitive color transparencies. This research was developed for the purposes of the treatment of a corpus of 13 photographs made by fashion photographer Henry Clarke.

Henry Clarke is an American photographer who was the main photographer for *Vogue* France from 1949 until 1973 and was in charge of photographing the French Haute Couture collection for the magazine. When Clarke passed away in 1997, his entire collection was bequeathed to the Palais Galliera, Musée de la mode de Paris (City of Paris Fashion Museum). Among the 90 000 images of the collection, there are a great amount of color films. We focused our study on 13 KODAK® Ektachrome films made in the 1950's that depict the New Look Style introduced by Christian Dior.

In addition to dyes deterioration and minor mechanical degradation, the transparencies showed surface dirt and accretions. Since no cleaning technique and product appeared to us via our conversations with conservators and in literature, the goal of this research was to identify a cleaning procedure suitable for chromogenic color films with incorporated dye couplers produced in the 1950's. We chose to apply 8 pure solvents and 2 solvents mixtures on 7 original Ektachrome transparencies from the 1950's and the 1960's, and on a recent 35 mm Ektachrome. Half of the samples were immersed in solvents, whereas solvents were applied with a cotton swab onto the other half. Visual observations and spectrophotometric measurements were then carried out in order to certify color and surface change. In parallel, an adequate imaging procedure with different lightings was set up, in order to document the artworks and the samples before, during, and after treatment.

Whereas hydrocarbon solvents have the least effects on the transparency materials, aqueous solutions cause damage on the emulsion layers, and ketones and ethyl acetate alter the acetate base. Immersion in water-ethanol causes important dyes extraction. Cotton swabs do not provoke any dye change, but the surface appears to be altered on 60% of the samples.

Following the previous results, and after testing the artworks surface, we decided to clean the transparencies with hydrocarbon solvents, as they presented lower risks and were efficient for some of the dirt, when applied with a cotton swab.

Elsa Thyss is Research Scholar, Department of Photograph Conservation, The Metropolitan Museum of Art, New York Elsa Thyss is a photograph conservator, currently a Research Scholar in photograph

conservation at The Metropolitan Museum of Art in New York. Elsa graduated with a degree in Art History with a Major in History of Photography in 2010 from the Ecole du Louvre in Paris, France. She followed the 5 year Professional Development Degree Program in Management for Cultural Heritage in Photography Conservation (Institut national du patrimoine, department des restaurateurs) in Paris. She received a Master's Degree in 2016.

Marie-Angélique Languille is heritage scientist at the Centre de recherche sur la conservation (CRC) where she has been appointed for leading the photographic material section. In 2008, she got a PhD in physical chemistry, more specifically in surface science applied to catalysis, on the study of gold and gold-palladium catalyzers. Before joining the CRC, she has been working for six years on the SOLEIL synchrotron facility near Paris where she was developing new analytical methods for studying art and archaeological artefacts. She now focuses her interests in history of photographic processes and alteration of photographic materials. In collaboration with the Fine Art University of Bern (CH), she studies the fading mechanism of Prussian Blue pigment in photographic materials. She has started working on the first colour photograph in the framework of an interdisciplinary project gathering art historians and physicists.

Conservation of Two Floris Neusüss Photograms

In preparation for the 2016 exhibition *A Matter of Memory: Photography as Object in the Digital Age*, two Floris Neusüss body photograms dating from 1965 were examined and treated by the conservation department of the George Eastman Museum. Acquired by the museum in 1969, the prints were last exhibited in 1971 and remained stored in exhibition frames, essentially forgotten, for 45 years. The photographs, each nearly 7 x 3 ½ feet, were produced on a translucent direct positive gelatin silver copy paper manufactured by Leonar, and were selectively developed by the artist. The treatment of these prints involved the removal of more than 450 inches of pressure-sensitive tape, stain reduction through extensive poulticing, localized surface cleaning, tear and pinhole mending, loss compensation, and hinging. Through communication with the artist and examination of early exhibition documentation, the museum learned that one of the prints had undergone considerable silver image deterioration and irreversible physical alteration. Notions of acceptable aging in contrast to the artist's intended appearance were discussed along with the challenges and practical restraints of preparing oversized photographs with major condition issues on an exhibition schedule.

Zach Long is Assistant Conservator at the Kay R. Whitmore Conservation Center at the George Eastman Museum. He holds a Master of Arts and Certificate of Advanced Study in Art Conservation from Buffalo State, State University of New York and a Bachelor of Fine Arts in Photographic Illustration from the Rochester Institute of Technology. He has held previous positions as a conservation technician at Harvard University's Weissman Preservation Center and as a research assistant at the Image Permanence Institute, Rochester Institute of Technology. He has completed graduate conservation internships at the Library of Congress, Gawain Weaver Art Conservation, and the Cleveland Museum of Art.

An Experimental Era: The Ungilded Daguerreotype in Early America

The earliest daguerreotypes made between 1839 and 1841 before the addition of the gliding layer are unique examples of an experimental phase of photography that pose different challenges to conservators and caretakers of photographic collections to ensure their longevity. While the daguerreotype process was made public in August of 1839, many subsequent changes occurred that improved upon Daguerre's original published formula. After several years of experimentation with the process, it eventually was streamlined to make it more repeatable and consistent, allowing for the opening of many portrait studios around the globe. A vast majority of the daguerreotypes that exist in collections, on the art market, in the flea markets and as family heirlooms have been gilded. The known information about daguerreotypes pertains to the more commonly gilded version while little has been written about their more fragile, ungilded counterparts. This lecture will explore the history of the daguerreotype from its birth in Paris and trace its path to the United States, where some of the improvements to the process were developed, while simultaneously examine why ungilded daguerreotypes require some further investigation from conservators on how to preserve them for future generations to come.

Rachel Wetzel has been a photograph conservator at the Conservation Center for Art and Historic Artifacts since 2007. She holds a BA in Art History and Fine Arts from the University of Pittsburgh (1997) and a MA in Art Conservation from the State University of New York Buffalo State College (2005). She completed the post graduate certificate in Photograph Conservation from the Advance Residency Program at the George Eastman Museum in 2007.

William Sawyer's study album

The Queen's University Archives has collection of artifacts that belonged to William Sawyer, a 19th century painter and artist from Kingston, Ontario. One of those items is a photograph album that Sawyer assembled as a study album, which has been little examined. The album contains a variety of photographs which may represent Sawyer's experimentations with these processes and photography in general. In addition, there is an accompanying journal of Sawyer's notes on various photographic processes with which he experimented during the same period in which the photographs in the album were produced. The condition of the photographs and the album as a whole is compromised and an appropriate treatment proposal is necessary to ensure the safety of the album. In order to devise a safe and appropriate treatment plan for the album, the photographic processes that were used to create the photographs needed to be identified. This project used a variety of analytic techniques, including stereomicroscopy, X-Ray Fluorescence (XRF), and Fourier Transform Infrared spectroscopy (FTIR), to identify the photographic process used to create each photograph and to develop a treatment approach based upon the type and the condition of each photograph. The photographs were identified as follows: 36 were albumen, 13 were salted paper and two were silver gelatin. One photograph of the 52 was unidentifiable, but an analysis of notes from the accompanying journal which Sawyer kept suggested a possible, but unusual, method for the production of this photograph. In addition, the project discussed the comparative utility of each of the analysis methods including, stereomicroscopy, and XRF and FTIR spectroscopy, in the identification of photographic processes.

Geneva Iklé is a photographic materials conservator. She earned her BA (Honors) in Art History with a minor in Chemistry from the University of North Carolina Wilmington in 2013 and an MA in Art Conservation from Queen's University in Kingston, Ontario in 2016. She also had an internship with the National Archives and Records Administration (summer 2015) and another internship at the Library of Congress (summer 2016). Geneva has experience working on paper and various photographic materials which she obtained during school and through her internships. The abstract above is from the research project that Geneva recently completed as a part of the final year of her master's degree entitled, *Scientific Analysis and Treatment of a William Sawyer Photograph Album*.

ATP Testing to determine if Cultural Artifacts are contaminated with Active Biological Materials

In late October 2012, Hurricane Sandy caused major flooding to huge areas of coastal New York and New Jersey. Storm flooding also caused extensive damage to materials held by archives, galleries, and other cultural institutions throughout the Mid-Atlantic. The hurricane-damaged archives of a New York City fine art gallery were subsequently brought to the Conservation Center for Art & Historic Artifacts (CCAHA) in Philadelphia, Pennsylvania for salvage.

Reports reached Philadelphia of heavy metal, organic, and biological contaminants present within the hurricane flood waters. Safety precautions were taken during the initial salvage, but these reports raised questions not only in further salvage, but for use of the archive materials once returned to the gallery. To this end, water samples were collected during subsequent treatment of the photographic materials in the collection. They were analyzed using the industrial water ATP Test, which detects actively growing microorganisms by tagging the adenosine triphosphate (ATP) present within all bacteria, mold, fungi, and algae. The ATP test is a firefly luciferase assay, producing digital output roughly quantitative to the biological mass present within the sample.

This paper will outline the salvage operation and safety precautions taken during the salvage operation, as well as the ATP testing and implications for future use of the archival materials.

Jessica Keister is Associate Conservator for Photographs at the New York Public Library. She received her graduate degree in photograph conservation from the Winterthur/University of Delaware Program in Art Conservation. Jessica also compiles and edits the Photographic Materials Group publication, *Topics in Photographic Preservation*.

Jessica Silverman is Senior Paper Conservator and Preservation Consultant at the Conservation Center for Art & Historic Artifacts (CCAHA). She received her graduate degree in paper conservation from the Winterthur/University of Delaware Program in Art Conservation. Jessica is a Chemical Hygiene Officer on CCAHA's Health & Safety Committee.

Disinfection treatment of molded silver gelatin prints with ethanol vapours

This study deals with mold damaged photographic gelatin and disinfection methods. It is based on the conservation treatment of seven silver gelatin developing-out prints on baryta paper, belonging to the Historical Library of Paris. These prints were water damaged. The emulsion has been weakened by flaking and hydrolysis of the constitutive gelatin. These damages are a consequence of mold development on the emulsion.

The goal of the study is to determine a suitable method to apply a solution of deionized water and absolute ethanol (30:70 v/v) mixture in order to obtain a biocide effect on four fungal strains: *Alternaria alternata*, *Aspergillus niger*, *Chaetomium globosum* and *Penicillium brevicompactum*. Three implementations were tested: solvent chamber, direct contact and direct contact followed by a mechanical removal. Different treatment times were tested for each method.

The deionized water and absolute ethanol mixture, applied for two hours in a solvent chamber, succeeded in killing the four tested fungal strains. This method was used for the disinfection of the studied prints.

Chloé Lucas is a photograph conservator. She graduated in history of art from the Sorbonne University in 2012. It was followed by a five year degree in photograph conservation at the Institut National du Patrimoine, from which she graduated in 2016.

Dr. Philippe Dantigny is an engineer in Food Processing and Master Degree in Food Microbiology (1985). He gets in PhD in 1989 in Biochemical Engineering at the National Polytechnics of Lorraine, Nancy, France. After post-doctoral work, he was appointed as a lecturer in biochemical engineer at the University of Bath, UK. Since 1991, he is a senior lecturer at the University of Lyon, France in food microbiology, and biotechnology. He is the head of the Predictive Mycology group at the LUBEM. He is member of the French Food Safety Authority (ANSES) for 8 years— Biohazard group, expert in Predictive modelling / Food spoilage / Mycotoxins contamination / Fermentations. Dr. Philippe Dantigny has coordinated 1 FP6 project and participated in another EU project. The group of Dr Philippe Dantigny has developed specific modelling tools for fungi, and more generally a new topic named "Predictive Mycology" which aims at understanding and modelling germination, growth and production of mycotoxins in food and agricultural products. Philippe Dantigny has published more than 30 papers (SCI) in this field, and edited a reference book in 2013, Predictive Mycology, Nova Science Publisher, with more than 25 contributors from 10 different countries.

Frank Deniel is a mycology engineer in service for provision of agri-food and cosmetic industries, at EQUASA of University of Brest for the past fifteen years. He has developed an expertise in fungi identification in the laboratory based of molecular, microscopic, classic method, and on control of those microorganisms in different kind of environmental, agricultural, food sector.