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Documentation in Minneapolis: the AIC Annual Meeting 2005

The General Session talks were varied, lively, and well written and presented. Each author's approach differed according to the project, the client, and the goal, but all were concerned with the importance of documentation and the difficulty and amount of time needed to make documentation accurate and comprehensive.

The keynote speaker, Dan Kushel, covered the history of conservation documentation and spoke briefly about digital photodocumentation. Talks in the first session included descriptions of particular projects (presented by Joe Sembrat, John Pursley, and Andrea Morse), problems in the preservation of time-based media (presented by Gwynne Ryan), and steps taken toward creating a web-accessible database of deteriorated fiber samples (presented by Jane Merritt). In the afternoon session, two lectures addressed the conservation documentation history of their institutions. (Morwenna Blewett, as well as Susan Russick with Giselle Simon), and three lectures described the current use and implications of institutional databases for conservation documentation (Marlan Green, with Dana Hemmenway, Sue Murphy and Dan Paterson, as well as Susanne Gansicke and Linda Pulliam). Authors continued to explore these themes on the second day of the General Session with a discussion of database systems by John Watson, descriptions of the way digital imaging helped a reconstruction project, by Lynn Grant, and documentation designed for three different surveys, presented by Hanna Szczepanowska. Specific information about the use of hand-held mobile technology was presented in the morning session by Sophie Middlebrook, and spectral imaging and sensitivity, as

well as the use of TIFF formats were discussed during the afternoon session by Rene de la Rie, Lawrence Taplin, Sarah Pinchin, and Tim Vitale. The General Session also included an informative talk by Debbie Hess Norris about the initial results of the Heritage Preservation Heritage Health Index, with a glimpse at what this enormous data set can tell us about preservation issues.

Talks at the General Session this year sparked

many discussions about how to accomplish digital documentation, and future trends in conservation documentation. Hopefully discussions on these topics will continue to flourish as more members embrace new methods and new technologies.



Exhibition Hall entrance and registration booths and this year's Annual Meeting

AIC NEWS

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Deadline for September Editorial Submissions

██████████: August 1, 2005.

We reserve the right to edit for brevity and clarity.

ADVERTISING

AIC accepts position-available ads only from equal opportunity employers. All position ads must conform to the standards for equal opportunity employment. The cost of Internships and Fellowships, Positions Available, and Classified Ads is: \$1.05 per word for members and \$2.15 per word for nonmembers; the minimum charge is \$75. The cost of advertising in Supplier's Corner is \$175 for 100 words. The cost of display ads is: 1/6 page \$215; 1/3 page \$360; 1/2 page \$445; 2/3 page \$570; full page \$695.

Deadlines for advertising copy are: February 10, April 10, June 10, August 10, October 10, and December 10.

All ads should be submitted to Ruth Seyler at ██████████

AIC NEWS STAFF

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From the President

Over the last two years, the AIC has made important improvements and more are in the works. Of note are the efforts that secured our Executive Director and her outstanding staff. Also important has been the attention of the Board to articulating the responsibilities of the AIC and FAIC especially in their work regarding the FAIC bylaws. A great deal of credit goes to our outgoing president, Tom Chase. Tom's involvement with the organization goes back to its very early days in the 1960s. The AIC Board has benefited from his knowledge, experience, and leadership, the result of his many years as a conservation administrator and practicing conservator. We are sincerely grateful for his commitment and service to this organization.

This year's annual meeting had an attendance of 700. By all accounts it was a success. Members generally liked the hotel and found the city, Minneapolis, to be comfortable and entertaining. The hard work of Sheila Paige with others from the AIC staff is especially acknowledged and appreciated. The theme of the General Session, documentation, has been praised as timely, interesting, and useful. I especially thank the speakers for their fine talks and the General Session Committee for their good work in organizing the sessions. AIC members mostly applauded the lack of a banquet in this year's program and we can look forward to more changes as the Annual Meeting Task Force prepares its report. Though we did not have a formal report from the Certification Development Committee during the meetings, work is continuing that will create a program for review by the membership and the board. Also, discussions regarding liability insurance for members remain ongoing and additional information about this potential benefit will be coming soon.

A particular area of pride for the AIC is our achievement with professional education. The dedicated service of former AIC Board Director of Professional Education, Katherine Untch (1999-2005) and AIC Program Officer for Professional Development, Eric Pourchot, deserves special recognition. The support allocated to produce, manage, and subsidize these programs has been extensive. All ongoing contributions and grants to sustain this area of exceptional benefit are greatly appreciated.

Professional service is important and I thank all those many members who serve on our committees, task forces, specialty groups, and angels' projects. AIC offers many services and opportunities as well as a sense of community to its members. It is a privilege for me to work with you.

—Nancy Odegaard, President
Arizona State Museum, Preservation Division
1013 East University Avenue
Tucson, AZ 85721-0026

fax: ██████████
odegaard@u.arizona.edu

Your Bequest Will Leave a Legacy to the AIC

A bequest to the FAIC is a simple, direct way to support the work of the AIC—work that supports conservators and promotes the field of conservation. Bequests made without restriction go to the FAIC Endowment, which provides annual scholarship and development income while building support for the future.

If you wish to place restrictions on the use of your bequest, please contact Eryl Wentworth to develop language that meets your special interests and the needs of the AIC.

Please consider a bequest to the FAIC when talking with your lawyer and financial advisor about estate planning.

AIC News

Staff Transitions

We are very pleased to announce that Jennifer Andruzzi, who came to AIC on May 2 on a temporary basis, has agreed to take the permanent position of publications manager. Jennifer has already proven her exemplary skills in layout, editing, and organization. She has six years of progressive desktop publishing experience, proficiency in a variety of software programs, and editing and design experience. We look forward to having Jennifer as part of our team! Jennifer can be reached at [REDACTED] or at [REDACTED] ext. [REDACTED].

New Fellows in AIC:

T. Rose Holdcraft

T. Rose Holdcraft has been Administrative Head of the Conservation Department at the Peabody Museum of Archaeology and Ethnology at Harvard since 1992, having served the PMAE as conservator on staff since 1988.

T. Rose earned a BA in fine arts with a minor in art history from Indiana University, an MA in art history with an award for Outstanding Graduate in Art History from the University of Cincinnati, and a Graduate Certificate of Special Studies in Administration and Management from Harvard. She pursued her conservation training at the Textile Conservation Center of the American Textile History Museum and at the Metropolitan Museum of Art, followed by several years' experience at the Rocky Mountain Regional Conservation Center.

T. Rose has been a highly effective fundraiser, winning grant support for surveys, treatment and storage projects, environmental projects, and intern training programs. She has been an energetic administrator involved in museum policy development, long range preservation planning, disaster planning and treatment management. She has been an influential educator, contributing to a public information website, developing workshops, presenting lectures for public and staff, preparing reference materials, and training more than 30 interns. She is a respected member of the conservation field, cited by her colleagues as one who has "brought order where there was chaos—a caring, ingenious, and energetic conservator and a valued colleague."

Kathy Gillis

Kathy Gillis is currently the head of objects conservation at the Virginia State

Museum in Richmond where she is responsible for three-dimensional objects.

Her experience prior to conservation school includes positions with several conservation labs in Florida, volunteer work with the DeYoung Museum and with private conservator James Pennuto, in San Francisco. Kathy studied conservation in the graduate program at the University of Delaware/Winterthur Museum, with a concentration on furniture conservation, under the tutelage of Greg Landry. She then held a furniture conservation internship at Colonial Williamsburg under the supervision of Cary Howlett, and a fourth-year fellowship with Brian Considine in the European Sculpture and Decorative Arts Department of the Getty Museum. She has worked at the Asian Art Museum in San Francisco and the Oakland Museum Conservation Center in Oakland California. She has been with the Virginia State Museum since 1997.

Kathy has actively participated in many conservation outreach projects, including public lectures and presentations. Her career includes years of service for an extensive array of conservation organizations including the Virginia Conservation Association, the Society of American Period Furniture Makers, and the Bay Area Conservation Guild. Recently, she was program chair of the Wooden Artifacts Group of AIC and was instrumental in the planning of two successful "Furniture in France" tours. She has also reviewed grants and projects for IMLS and Save America's Treasures. AIC is proud to welcome her as a new Fellow.

AIC Angels, 2005

The Angels project this year was a little different than usual: it was small and rural, and involved not one but two organizations.

The project began on Sunday, June 5 (a full three days before the Annual Meeting), with most of the Angels flying into Minneapolis. Our final destination was Shevlin, Minnesota, site of the Clearwater County Historical Society. But first we traveled for four hours, in two vans, to Itasca State Park where we stayed the night. The next morning, we continued on a 25-minute trip north to Shevlin.

In Shevlin, we were met by the Historical Society director and two staff members, and by the archivist for the White Earth Tribal Archives, our partners in this year's activities. The group divided into teams to work on several projects. One team unloaded and dismantled a range of shelving, installed taller uprights,

Congratulations to Susan Lunas of Many Moons Book Conservation, the AIC 2005 Annual Meeting Exhibit Hall Contest winner. Susan will receive a free registration for AIC's 2006 Annual Meeting in Providence, Rhode Island, from June 15-20.

and cut decking and additional shelves, after which they put back the contents in slightly better order than they had found them. Another team partially dismantled, expanded, and strengthened hanging storage for clothing, and replaced the clothing that had been removed. Several items of clothing were re-housed using acid free boxes donated by The Hollinger Corporation as it was decided that the clothing was too fragile to hang. Another team created dust and light covers for both tiers of the clothing storage so that the entire collection was protected from light. Another project was the creation of rolled storage for textiles. This entailed making rolls using Sonotubes, Marvelseal, and unbleached muslin and making closet poles to support the tubes between two lengths of chain hanging from the ceiling. Museum staff were taught how to make padded hangers that they assembled out of existing hangers, thermo set polyester quilt batting, and cotton/poly surgical stockinette.

While the work was progressing on the Historical Society material, another team was working on a carton of documents from the White Earth Tribal Archives. An estimated 2,000 records, letters, receipts, and other paper documents were organized, surface cleaned when necessary, placed in folders and boxes. As needed, documents were repaired using Japanese tissue and paste. Several were also humidified and flattened. What began as a jumble in a records box became seven Hollinger boxes of material prepared for research. This material is one of three boxes of extant documentation of land transfers from members of the White Earth Tribe of Objjway to, primarily, non-Indians for the purpose of logging. The material is being examined—it may be used in litigation as the Tribe attempts to recover some of its land.

Thanks go to the Clearwater County Historical Society and its staff and to the White Earth Tribal Archives and its staff for providing the opportunity to help. Thanks also to the project sponsors, the Beito Foundation, Thief River Falls, MN whose financial donation made it possible, the Hollinger Corp. for providing a wealth of acid-free boxes, and to the Minnesota Historical Society. Mostly thanks to this year's Angels, all of whom did a superb job: Doreen Alessi, Alicia Bjornson, Gary Frost, Albrecht Gumlich, Sheila Hague, Beth Heller, Caitlin Jenkins, Susan Martin, Judy Ozone, and to two colleagues at the Minnesota Historical Society, project co-coordinator Tim Glines and also Jean Moberg and Bob Herskovitz.

—Paul Messier

Annual Meeting Awards

The Awards Committee is delighted to announce this year's award recipients to those members who did not attend the annual meeting in Minneapolis. Presentation of the awards differed a bit in format this year because of the absence of a banquet. Instead, awards were presented during the General Session and the Business Meeting where the AIC Board awarded the following deserving recipients:

The National Center for Preservation Technology and Training was given the Award for Distinguished Achievement for Advancement of the Field of Conservation. The award was accepted by NCPTT Executive Director Kirk Cordell.

The Keck Award, given for a sustained record of excellence in the education and training of conservation professionals, was presented posthumously to Martin Weaver and accepted by his widow Leslie. Among his many accomplishments, Martin was director of the Historic Preservation Program at Columbia University from 1991 to 2003. Sharing the Keck Award this year was Irene Brückle of Berlin, formerly of the University of Delaware Training Program. An unprecedented letter-writing campaign brought attention to Irene's virtues and preceded her winning the award. Debbie Evans presented the award to Irene. Shelly Sass presented Martin's award to Leslie.

The University Products Award was given to Chris Stavroudis—a private conservator in Los Angeles—for distinguished achievement in the conservation of cultural property. It was presented to Chris by Tom Chase. John Dunphy was in attendance as representative of University Products and presented an award check to Chris.

Honorary AIC Memberships were granted to Mary Todd Glaser and Don Etherington. A special President's Award was presented by President Tom Chase to Susan Nichols, formerly of *Save Outdoor Sculpture!*, a joint project of Heritage Preservation and the Smithsonian American Art Museum.

At a future date, a presentation of the prestigious Forbes Medal for distinguished contribution to the field of conservation by a non-conservator will be made to Angelica Rudenstine, program director of the Andrew W. Mellon Foundation, whose professional support of, and personal interest in, the work of conservators may be without peer.

The Awards Committee has worked especially hard this year since we had to overcome several obstacles, including the departure in February of the Chair for Rome, and a January blizzard on the East Coast that forced

“Recognizing those people and organizations that have contributed so much to our field is one of the great pleasures of having been president of the AIC over the past two years. Yet, we have so many more unsung heroes who have dedicated their lives to preserving our heritage--and to those people, I extend a heartfelt thank you!”

—Tom Chase,
immediate past
president, AIC

the Committee to meet via conference call. It has been a delight for me to spend three years with a group of my peers who have the annual pleasure of advising the AIC Board on which of our colleagues and conservation-affiliated institutions should be rewarded for their work. As I depart, let me encourage all members to read the descriptions of the awards on the AIC website or in the Members' Directory, and to nominate deserving individuals and institutions this fall to new Chair Molly Lambert. Joining the wonderful and hard-working Molly, and erstwhile, about-to- retire Arthur Beale, will be our new committee member Peggy Ellis.

—Will Shank
Booth Family Fellow
American Academy in Rome

Annual Meeting News

Thank you to this year's Exhibitors:

Archetype Publications Ltd
Archivart
ARIS Corporation and RMS Insurance Brokerage
Art Innovation B.V.
Blackmon-Mooring Stematic Catastrophe, Inc.
Canadian Conservation Institute
Conservation Data Systems, LLC
Conservation Resources International, LLC
CSI - Crystalizations Systems, Inc.
Dorfman Museum Figures, Inc.
FLIR Systems
Gas Sensor Solutions
Gaylord Bros.
The Getty Conservation Institute
Getty Publications
Heckman Bindery
Hiromi Paper International
The Hollinger Corporation
Huntington T. Block Insurance Agency, Inc.
Innov-X Systems, Inc.
Kasemake/McKenna Systems, Inc.
Keepsafe Systems/Microlimate Technologies International
Maryland Glass & Mirror Company, Inc.
Metal Edge, Inc.
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MuseuM Services Corporation
National Center for Preservation Technology and Training
Nerwin&Martin, Inc.
Preservation Glazing, Inc.
RONTEC USA, Inc.
Safe Sound Archive
SmallCorp

TALAS
Tru Vue, Inc.
University Products

Call For Papers—AIC Annual Meeting General Session 2006, Providence, RI

Using Artifacts: Is Conservation Compromised?

When does society have the right to use cultural property? Access to and use of cultural property is constantly debated. The assessment of possible damage or change that could occur to physical condition, perceived value(s), or possible future uses is usually weighed when making the decision to use an object. The 2006 AIC General Session will explore the criteria that influence the decision-making process. The Committee welcomes submissions on various aspects related to balancing preservation concerns and access to objects that are of interest to all conservation disciplines such as:

- Traveling exhibits and problems for couriers.
- Functional objects: When is using the original acceptable?
- The use of reproductions and surrogates in museum displays.
- Permissible cultural and religious uses of objects.
- Assessing and protecting changing societal values.
- Acceptable research and scientific techniques on objects.
- Possible loss of monetary value when objects are used.
- Acceptable use and displays in historic houses.
- Developing levels of conservation compromise.

AIC members interested in presenting papers during the General Session of the 2006 Meeting, which will be held in Providence, Rhode Island, should email an abstract of no more than 500 words by Friday September 16, 2005 to Eliza Gilligan at [REDACTED] or to:

The AIC General Session Committee
c/o Eliza Gilligan
Smithsonian Libraries
SISC Rm. 2H7 MRC 806
PO Box 37012
Washington, DC 20013-7012

Annual Meeting Photos



Leslie Weaver accepts the late Martin Weaver's Sheldon & Caroline Keck Award from Shelley Sass



Mary Todd Glaser is awarded Honorary Membership by AIC President Tom Chase



Chris Stavroudis after accepting the University Products Award



AIC Board of Directors members: Paul Messier, Jane Klinger, Karen L. Pavelka (incoming), Mary Striegel, Tom Chase (outgoing), Meg Loew Craft, Richard L. Kerschner, Nancy Odegaard, and Martin Burke (incoming)



Irene Brückle and Debra Evans celebrate Irene receiving the Sheldon & Caroline Keck Award



Kirk Cordell, on behalf of NCPTT, accepts the Distinguished Award for Advancement of the Field of Conservation from AIC President Tom Chase.



Susan Nichols accepts the President's Award from AIC President Tom Chase.



George Wheeler conducts the Introduction to Stone Conservation workshop.



AIC members get fit tested at the Respirator Fit Testing workshop

Grants, Awards, and Fellowships

Heritage Preservation

More Museums to be Eligible for CAP

Heritage Preservation is pleased to announce changes to the Conservation Assessment Program (CAP) starting in FY2006. These changes will make CAP even more accessible to the museum field and streamline the application process.

The major changes affecting CAP applicants regard two modifications to the eligibility criteria. Specifically, the number of days per year a museum is required to be open to the public will be changed to 90 days (previously 120), and a second CAP assessment (or ReCAP) will now be available to organizations who went through CAP more than seven years ago and wish to update their assessment.

CAP will be administered through a cooperative agreement between IMLS and Heritage Preservation. Although CAP's administration is changing, the heart of the program remains the same. CAP provides two-

day assessments that help small museums select a professional conservator who examines the museum's collections, environmental conditions, and sites. The assessor then writes a report recommending priorities to improve collections care. The assessment reports can assist the museum in developing strategies for improved collections care, long-range planning, and fund-raising for collections care.

The FY 2006 CAP applications will be mailed on *Friday, October 7, 2005*, to museums on the CAP mailing list and will also be available on Heritage Preservation's Web site at www.heritagepreservation.org. Applications will continue to be accepted on a first-come, first-served basis until the postmark deadline of December 1, 2005.

For additional information visit www.heritagepreservation.org, call 202-233-0831, or e-mail kmarks@heritagepreservation.org.

November 1 Deadline for FAIC Samuel H. Kress Conservation Publication Fellowships

The FAIC Samuel H. Kress Conservation Publication Fellowships

offer support to AIC Professional Associates and Fellows to write book-length manuscripts on conservation topics. The deadline for receipt of applications is November 1, 2005.

The fellowships provide an award of \$25,000 to allow time (up to 18 months) to complete a manuscript. Research should be largely complete before applying. Submission of one or more sample chapters is strongly recommended.

29 publication fellowships have been awarded by FAIC since 1994. Current funding from the Samuel H. Kress Foundation covers 2004-2006.

Complete guidelines and application forms are available on the AIC Website at <http://aic.stanford.edu/faic/grants/index.html>, or contact Eric Pourchot at [REDACTED], ext. [REDACTED]; [REDACTED]

Getty Conservation Institute Fellowships

Residential and non-residential fellowships are available from the Getty Conservation Institute for the 2006-2007 year. These include the GCI's Conservation Guest Scholar program, which allows senior professionals in the

Grant Deadlines

American Association of Museums (AAM) at www.aam-us.org

- Museum Assessment Program: February 15

Getty Grant Program at www.getty.edu/grants

- Getty Research Grants for Scholars: November 1
- Museum Conservation Grants, Survey Grants: no deadline
- Museum Conservation Grants, Treatment Grants: no deadline

Institute for Museum and Library Services (IMLS) at www.imls.gov

- Conservation Project Support: October 1
- Conservation Assessment Program: December 1
- Librarians for the 21st Century: December 15
- Library grant deadlines are early in the year.

National Endowment for the Arts (NEA) at www.nea.gov

- Museums, Conservation: August 16
- Museums, Collection Management: August 16

National Endowment for the Humanities (NEH) at www.neh.gov

- Grant to Preserve and Create Access to Humanities Collections: July 15
- Consultation Grants for Museums, Libraries, or Special

Projects: September 16

- Stabilization of Humanities Collections Grants: October 3
- Grants for Teaching and Learning Resources and Curriculum Development: October 3
- Challenge Grants: November 1; May 2, 2006
- Collaborative Research Grants: November 1
- Recovering Iraq's Past: Request for Proposals to Preserve and Document Iraq's Cultural Heritage: Projects accepted on a rolling basis

National Historical Publications and Records Commission (NHPRC) at www.archives.gov/grants/index.html

- Grant proposals, two deadlines per year: October 1 and June 1

Preserve America at www.preserveamerica.gov

- Preserve America Communities, four application and designation cycles per year: September 1; December 1; March 1; June 1

Save America's Treasures at www.cr.nps.gov/hps/treasures/index.htm

- Grant Applications: February 1, 2006

field to take time—in increments of three, six, or nine months—to work on projects or publications that will advance the practice of conservation around the world.

Applications for the 2006–2007 year must be received in the offices of the Getty Foundation by November 1, 2005. Applications and further information are available on the Getty's Web site at <http://www.getty.edu/grants/research/scholars/conservation.html>. Questions can be addressed to researchgrants@getty.edu.

Allied Organization News

AAM Council of Affiliates and Annual Meeting

The annual AAM meeting includes lectures and panel discussions as well as additional meetings of representatives from affiliated organizations that provide an opportunity for interest groups within the museum field (such as conservators) to make their voices heard.

Council of Affiliates

Joint Meeting of the AAM Board, the Council of Affiliates, the Council of Regional Associations, and the Council of Standing Professional Committees, 30 April 2005

2006 marks the 100-year anniversary of AAM. The next meeting, to be held in Boston, will have as its theme “A Centennial of Ideas: Exploring Tomorrow's Museums.” The call for session proposals has gone out with a request that proposals be “honest and passionate, creative and provocative,” in order to provide a forum in which “to debate the most important issues fully and fervently.” In conjunction with the centennial, the AAM Board has passed a resolution declaring 2006 the Year of the Museum. AAM is inviting affiliate organizations to sign on to the resolution and to ask their membership to contact members of Congress to support a congressional resolution.

A formal presentation of the new Strategic Framework was made. This is still considered a draft until final comments are received by the various AAM constituencies. The process for developing the Framework included

field-wide surveys and issues session with the various disciplines. The Framework consists of a tri-part vision statement, the mission statement, four core beliefs, six values, and four organizational goals.

Council of Affiliates, 1 May 2005

The COA meeting was small this year, with only about ten people in attendance. After brief introductions, a statement entitled “Museums and Diversity: A National Initiative to Foster and Sustain Inclusive Practices” was distributed. The statement was developed by the AAM Diversity Committee and is being distributed to universities as well as museums. Affiliate organizations were asked to sign on to the statement.

Terry Davis, Director of AASLH and Chair of the Council of Affiliates, spoke very briefly on an initiative to provide states with formula grants to support cultural heritage projects for individual states through the IMLS. The details are still being worked out for final presentation to Congress. If this program wins approval, it will impact our membership as it is anticipated that many of the projects will be for conservation work or have conservation as a component of the resultant work contracts. AIC will continue to keep you informed as this process unfolds.

Members of the COA were asked to present on nationally significant initiatives that they are developing. I spoke about our work on the development of a certification program. Interestingly, Dan Stark of the American Association of Botanical Gardens spoke about that organization's work in developing a certified collections manager program.

Sessions

I went to eight sessions of interest. Two of the talks were on long-distance learning for collections care. One talk was about an IMLS pilot project with the University of South Carolina, and the other was on the long-distance learning curriculum development for George Washington University's graduate program in Museum Studies. The underlying question, of course, is that of hands-on experience, especially in col-

lections care and handling, and how it relates to these online initiatives.

In other sessions, conservators and AIC members were fairly well represented. I was surprised at how many panels included conservators. However, this presence is still small, and we must work to increase the visibility of AIC at the meeting. The following conservators are to be commended for their excellent presentations: Elizabeth Buschor, Ramona Duncan-Huse, Christy O'Grady, Shelley Reisman Paine, Martin Radecki, and Bettina Raphael.

—Jane E Klinger,

[redacted]; fax ([redacted])
[redacted]

People

George Wheeler has been named the director for conservation in the graduate program in Historic Preservation at Columbia University and will continue part-time in the Department of Scientific Research at the Metropolitan Museum of Art. His contact information at Columbia University is: (212) 854-3973; and gw2130@columbia.edu. In addition, his book, *Alkoxysilanes and the Consolidation of Stone*, was recently published by the Getty in the Research in Conservation series. Support for the writing of this book was provided by the Samuel H. Kress Foundation through the AIC Publication Fellowship program.

Mark Bockrath announces his resignation as paintings conservator from Winterthur Museum. He will be working full time for Barbara A. Buckley and Associates Paintings Conservation at [redacted], West Chester, Pennsylvania 19382, [redacted].

Bringing more than 25 years of experience in conservation and restoration of gilded objects as well as a vast knowledge of framing history, **R. Wayne Reynolds**, the founder and owner of Giltwood Restoration in Peekskill, New York, joined Julius Lowy Frame & Restoring Company, Inc. as its first director of new business development and product design effective June 1, 2005.

The Art Conservation Department of Buffalo State College announces the internships of its third-year students: **Amy Crist** (paper/book), Walters Art Museum and the Baltimore Museum of Art; **Sarah Freeman** (paper/photo), Legion of Honor, Fine Arts Museum of San Francisco; **Heather Hamilton** (paper), Boston Athenaeum and the Harvard University Library Weissman Center; **Marieka Kaye** (paper/book), Huntington Library, San Marino, CA; **Erin Kelly** (paintings), North Carolina Museum of Art, Raleigh, NC; **Yoonjo Lee** (objects/textiles), Los Angeles County Museum of Art; **Susie Seborg** (objects), Museum of Modern Art, New York, NY; **Dawn Rogala** (paintings), Yale University Art Gallery, New Haven, CT, and the Wadsworth Atheneum, Hartford, CT; **Dana Senge** (objects), Nelson-Atkins Museum of Art, Kansas City, MO; **Theresa Smith** (paper), the Kupferstichkabinett, Berlin, Germany.

The Art Conservation Department, Buffalo State College, is pleased to announce that the 10 students admitted into the 2005 entering class are: **Sara Bisi, Kathryn Campbell, Emily Gardner, Liz Homberger, Paige Issacs, Dawn Jaros, Caitlin Jenkins, Colleen Snyder, Catalina Vásquez-Kennedy, and Chris Watters.**

The Conservation Center of the Institute of Fine Arts is pleased to announce the incoming students for the graduating class of 2009, including: **Jennifer Badger, Aimée Ducey, Alisa Eagleston, Tara Hornung, Diana Johnson, Emy Kim, Katie Patton, Anna Serotta.**

Worth Noting

National Digital Information Infrastructure and Preservation Program (NDIIPP).

In December 2000, Congress authorized the Library of Congress to develop and execute a congressionally-approved plan for a National Digital Information Infrastructure and Preservation Program. A \$99.8 million congressional appropriation was made to establish the program. According to the conference (H. Rept. 106-1033),

“The overall plan should set forth a strategy for the Library of Congress, in collaboration with other federal and nonfederal entities, to identify a national network of libraries and other organizations with responsibilities for collecting digital materials that will provide access to and maintain those materials. ... In addition to developing this strategy, the plan shall set forth, in concert with the Copyright Office, the policies, protocols and strategies for the long-term preservation of such materials, including the technological infrastructure required at the Library of Congress.”

The legislation mandates that the Library work with federal entities such as the Secretary of Commerce, the director of the White House Office of Science and Technology Policy, the National Archives and Records Administration, the National Library of Medicine, the National Agricultural Library, the National Institute of Standards and Technology, and “other federal, research and private libraries and institutions with expertise in telecommunications technology and electronic commerce policy.” The goal is to build a network of committed partners working through a preservation architecture with defined roles and responsibilities.

The Library of Congress digital strategy is being formulated in concert with a study commissioned by the Librarian of Congress and undertaken by the National Research Council Computer Science and Telecommunications Board. “LC 21: A Digital Strategy for the Library of Congress” was issued July 26, 2000, and made several recommendations, including that the Library, working with other institutions, take the lead in the preservation and archiving of digital materials.

The complete text of the “Plan for the National Digital Information Infrastructure and Preservation Program” is available at www.digitalpreservation.gov. This includes an explanation of how the plan was developed, who the Library worked with to develop the plan, and the key components of the digital preservation infrastructure. The plan was approved by Congress in December 2002.

Three major program elements are being developed by the NDIIPP:

- development of a network of preservation partners
- development work on a technical preservation architecture
- funding of digital preservation research

In the fall of 2004, LC entered into cooperative agreements with eight consortia for preservation projects that will receive Library of Congress funding to include such topics as digital content relating to important people, events, and movements that have had a major impact on the nation’s history—such as the birth of the “dot com” era, satellite mapping, public television programs, historical aerial photography, and opinion polls and voting records. A list of grants awarded to lead institutions and their partners can be found at www.digitalpreservation.gov

The Library of Congress is leading this massive digital preservation program to help ensure that the students, historians, and lifelong learners of tomorrow will be able to study these subjects and others with the same degree of comprehensiveness and reliability that historians of the past enjoyed when they were studying less ephemeral analog materials. These awards are the next step to capture and preserve at-risk digital content that is vital to our nation’s history. The second element of the program is building a technical preservation architecture that will serve as a framework to guide the development of a national preservation network. The principles are that the architecture must support institutional relationships, separate preservation and access, be constructed modularly and assembled over time, be able to upgrade parts without disruption of the whole, and use broadly-adaptable standards and protocols.

Preservation research, the third element of the preservation program, has begun with the award of joint LC and National Science Foundation (NSF) grants. A recent list of winning institutions and their project titles can be found at www.digitalpreservation.gov/about/pr.

New Publications

Repertorio de Textos Internacionales del Patrimonio Cultural and Territorio y Patrimonio. Los Paisajes Andaluces are publications in the Cuadernos series of the Instituto Andaluz del Patrimonio Histórico. The former contains a selection of texts that focus on the theoretical principles involved in the care of buildings and sites of cultural significance. The latter, the postprints of a conference of the same name held in Seville in 2001, discusses the condition of landscape as a factor in the preservation of cultural patrimony. In Spanish. 2003. 323 and 212 pages respectively. Published by the Instituto Andaluz del Patrimonio Histórico.

Preservation and Collections Care Issues During Building Projects and Renovations is an online publication of SOLINET. The printable PDF document contains six papers and an introduction from SOLINET's conference of the same name held in May 2003 in Atlanta. The publication provides practical strategies for protecting library collections during construction and renovation projects as well as discusses the challenges of moving collections before and after such projects. The publication is located on the SOLINET website at www.solinet.net/preservation/construction.

George Washington Remembers: Reflections on the French and Indian War, edited by Fred Anderson, is a collection of essays celebrating a newly conserved manuscript by George Washington. Conservator Christine Smith discusses her thinking in developing a treatment proposal and describes the manuscript's materials and related implications for the object's stability. She also describes the conservation treatment as well as the environmental needs of iron gall ink manuscripts. Included in an appendix is a discussion of recent research about iron gall inks. 2004. 173 pages. Published by, and available from, Rowman and Littlefield, www.rowmanlittlefield.com.

Solvent Gels for the Cleaning of Works of Art: The Residue Question, edited by Valerie Dorge, tackles the issue of cleaning agent residues left on surfaces. Among the issues covered are the theory and application of gel cleaning systems, the detection of residues left on the surfaces of objects cleaned with these systems, research into solvent-gel and solvent residues, stability of surfactants during natural and artificial aging, and recommendations for formulating gels for specific cleaning tasks. 2004. 180 pages. \$32.50. Published by Getty Conservation Institute. Available from Getty Publications, www.getty.edu.

Changing Pictures-Discolouration in 15th to 17th Century Oil Paintings, by Margriet van Eikema Hommes, is the first extensive art historical study focusing on the phenomenon of the discoloration of paintings. Five studies present research on the original composition of paints and the original appearance of the paint in Renaissance and Baroque oil paintings. Chapter topics include determining the intentions of painting methods and recipes, methods used by painters to prevent color changes, verdigris glazes in historical oil paintings, indigo as a pigment in oil painting and the problem of its fading, and an interpretation of the dark areas in Raphael's Transfiguration of Christ. 2004. 264 pages. £60.00. Published and available from Archetype Publications, 6 Fitzroy Square, London W1T 5HJ, www.archetype.co.uk

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Digital Imaging in Conservation: Cameras

These “automated” functions generally negate the inherent quality of digital capture in favor of a pleasing appearance based on consumer studies.

In the February 2003 issue of Popular Photography a review of the Canon 1Ds (11 MP) show a side-by-side comparison of digital and film images shot through the same lens and comparable Canon bodies. The EOS 1Ds, digital image won easily. Film was declared dead on the spot.

Digital images can vary in their quality because they are dependent upon hardware and software combinations. Images from point-and-shoot cameras, which output JPEG images, will be inferior to film in many ways. However, both digital scanning backs and flatbed scanners routinely outperform film on the basis of resolution, noise, and color fidelity. When used wisely, DSLR cameras will also outperform film.

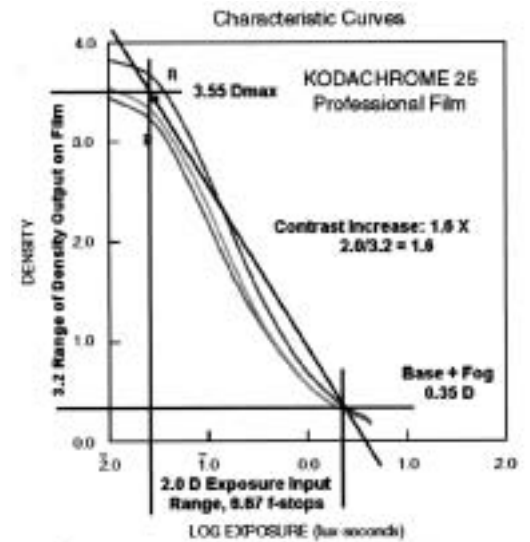
Camera and scanner manufacturers offer many automated options that facilitate quick imaging to meet the fundamental needs of the average consumer. These “automated” functions generally negate the inherent quality of digital capture in favor of a pleasing appearance based on consumer studies. Users wishing to extract the most information from a digital image will turn off all automated functions except focus and metering, and open the RAW (unprocessed) file in Photoshop, saving the image as a 16-bit TIFF file. This workflow runs counter to many manufacturer recommendations that rely on compressed JPEG images made using proprietary software.

The TIFF image format should be used to realize the full value of a digital image. JPEG images have only limited value. Their primary value is size: (1) JPEG images download quickly from the web; and (2) JPEGs are so compressed (lossy-type compression) that many more can be loaded into older, relatively small “digital film” camera memory cards. Today, however, about 60-150 RAW images (about 7-15 MB per file, using their lossless compression) can now be saved on one of the many \$65 1GB memory cards most users carry as reusable digital “film”.

For enhanced control during conservation documentation, some cameras can be tethered to a computer running image capture software, such as Nikon Capture 4.1 or Breeze DLSR Remote Pro, for Canon cameras. In a fixed camera mount and lighting situation, such as a copy stand, the image is downloaded through the USB or Firewire cable immediately after the exposure has been triggered from the laptop or desktop com-

puter controlling the camera. Even older slower computers can be used for this activity.

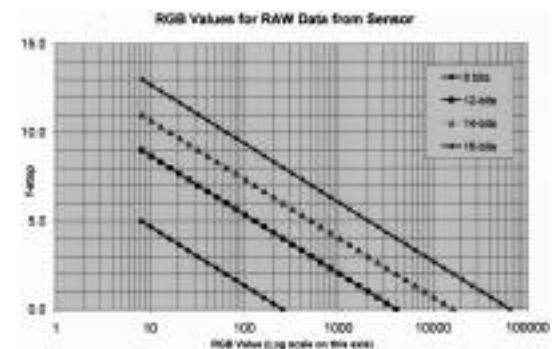
Why is Digital Imaging Superior?



Linear Response: The response of digital sensors to light is linear; film is not linear.

The plot of the Characteristic Curve of Kodachrome 25 transparency film shows the profound non-linearity of film. In addition, the plot shows the image contrast increase that most films use to enhance the image for viewing. For the normal input of 6-2/3rds stops of light, the film enhances the tonal range to 10-2/3rds stops of image output. The film does not capture 10-2/3rds stops of actual tonal range; it creates 60% more tonal range, from 6-2/3rds stops of actual image. An “f-stop” of light is 0.3 (D) density, a change of one stop increases or decreases the density of the image 0.3D.

In the RAW Data from Sensor plot, the linear responses of generic digital sensors are depicted. There is no change in the slope of the plot; as can be seen in the Kodachrome plot above, with separate (1) shoulder; (2) toe; and (3) “S” or “Z” shape to the main section (gamma) of the film’s response to light.



Noise in a digital capture is different from noise in film. Pixels have a finite size and are uniform across the element.

Starting with the linear information, the manipulation of the digital image is almost limitless, and can all be accomplished by one operator. This level of control is not possible with film where three to four craft specialists are required to do a more limited set of optical and chemical image modifications.

Noise: Noise in any imaging system is dependent on the sensitivity of the sensor, whether that sensor is film or digital. The speed of the sensor translates into the familiar ISO speed ratings. The higher the ISO speed, the shorter the acquisition time and thus the higher the signal-to-noise ratio (SNR). The SNR (noise) of film is commonly accepted to be 10:1 (10%) while the noise in an electronic imaging circuit is commonly accepted to be 100:1 (1%).

Noise in a digital capture is different from noise in film. Pixels have a finite size and are uniform across the element. Film has a continuous spectrum of small-frequency-domain elements (grain)—either (1) 25 um dye clouds; or (2) 2.0 - 0.2 um silver particles.

Pixels are uniform, thus they have only a signal-to-noise ratio based on circuit and electron properties. Film has peak-to-peak noise as high as 10-30%; at that point the extreme variation extinguishes fine detail. Note that pro-found image noise can be introduced by using high ISO ratings, JPEG compression, and sloppy image processing in both the digital camera and image-processing software.

Dynamic Range: The response of the sensor to light is dynamic, or tonal range. The Kodachrome 25 film above has about 7-8 viable f-stops response to light.

Dynamic Range Based on Bit-Depth		
Bit-Depth	f-stop Range	Density Range
8 bits	5	1.5 D RAW
12 bits	9	2.7 D RAW
14 bits	11	3.3 D RAW
16 bits	13	3.9 D RAW

The various bit-depth capabilities of the digital sensors have their own limitations, as above. Their response is limited by the number of Red/Green/Blue values an image can be divided into at the various densities. The limit point is defined as the lack of more than one RGB step at one-tenth density (0.1D) increments, using the RAW data.

Color Depth

In a digital file, each pixel has a bit-depth based on the number of steps into which the image information is assigned. The magnitude of color information in equivalent picture elements is thousands of times greater in digital

than in film of any type. Film has about 10-80 color values for a given density (per 10 um square) while 8-bit color has over 16.7 million color possibilities for each pixel.

Color Depth Based on Bit-Depth		
Bit-Depth	Steps	Color/B&W
8 bits	256	B&W
12 bits	4096	B&W
14 bits	16384	B&W
16 bits	65536	B&W
24 bits	16.7 M	8-bit color
36 bits	68.7 G	12-bit color
42 bits	4.4 T	14-bit color
48 bits	281 T	16-bit color

At 8-bit color, 256 steps are possible because 2 is multiplied by itself 8 times; it can be described as 24-bit color because there are three channels of 8-bit information that will yield 16.7 million possible colors (256 (R) x 256 (G) x 256 (B) = 16,700,000). The use of 8-bit color with the Gamma 2.2 correction is basic digital color technology; it is applicable for many imaging situations, but not all.

In the DSLR cameras listed on page 15, an image is captured at 12-bit RAW and then written to a Gamma 2.2 correction for output and processing. The image at Gamma 2.2 has more RGB values available at a given density. For a detailed discussion on the value of 16/48-bit imaging, see the author's essay on the EMG website.

In a digital image, each pixel will contain three RGB color components. These three primary colors roughly correspond to peak sensitivities of the human retina and are interpreted by the brain as color.

Film has roughly the same sensitivity, with 3 spectral peaks, but the red peak is usually shifted "red" to about 650 nm. In the Kodak CCD tri-liner arrays, the red peak can be about 610 nm. It is much closer to human vision than film.

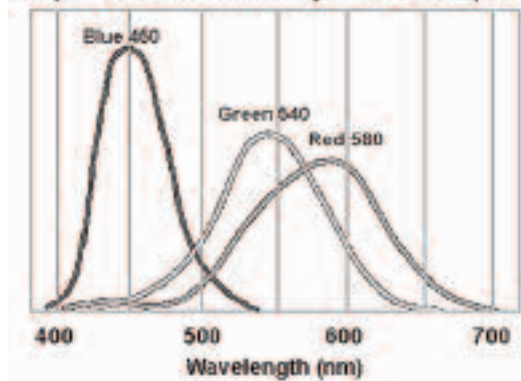
Digital Sensor Resolution

In a digital imaging, the sensor (CCD or CMOS) replaces the film. A typical sensor has pixels that range from 4 to 9 um in size. For the sake of defining scale, there are 25,400 um (microns) per inch. A CCD with an 8 um (gross) pixel pitch would yield a resolution of 3175 pixels per inch.

In the digital SLR camera comparison chart, the size of the sensor and number of pixels has been included. Though it is possible to extrapolate individual pixel size from these data, there are many factors that influence the actual pixel size. For example, only about 50-70% of the actual sensor area will be used to gather photons; the remainder will be proces-

Digital files also have a white point that can be adjusted so that the lights, as well as all parts of the image, do not have a color cast. . . . The white point in a digital color space is the starting point for the rest of the color mapping process.

Response of the Human Eye Color Receptors



sor circuitry. Some sensors have small lenses over each pixel to collect light from a larger area, making pixel size difficult to calculate.

The RAW Pixels in Sensor data in the camera chart, on page 15, is used to calculate the camera's resolution, in pixels per inch (ppi); there are 25.4 mm per inch. The small side is taken to be the 24 mm side of 24 x 36 mm, 35mm film, or an inch.

White Point Correction

Digital files also have a white point that can be adjusted so that the lights, as well as all parts of the image, do not have a color cast. In film, color cast is seen as the slight blue cast in most Kodak Ektachrome and Fuji color films, and the red cast in Kodachrome films. The white point in a digital color space is the starting point for the rest of the color mapping process.

If a neutral gray scale is included in an image the image can be fine tuned to be an exact replica of the original. Good imaging practice recommends including a target in every image; the GretagMacbeth ColorChecker is a well characterized and consistent color target. Unlike the commonly used Kodak color references (Q60 type) which are perfectly useful for film, the ColorChecker contains a perfectly neutral gray scale. Using this gray scale, color shifts from sensor color filters, light color irregularities, image processing errors or other sources can be corrected. The 8.5 in. x 11 in. ColorChecker costs roughly \$75 and the 3 in. x 4 in. Mini ColorChecker costs approximately \$65.

While the 6-patch gray scale is all that is required for color cast correction, the inclusion of the full chart is often helpful when adjusting saturated reds, oranges, and yellows.

Problems with Digital Imaging

Spectral Response: While digital imaging is based on the three primary colors that

form the basis of the human vision system, sensors cannot completely replicate the spectral response shown in the plot. For example, the spectral response plots for digital sensors is shifted significantly to the right (610-620 nm) due to the heavy native infrared response of silicon-based light sensors. This shift results in problems with reds. Nevertheless, compared to film the problem is relatively minor.

Bayer Pattern: The Bayer pattern creates a 1:2:1 (RGGB), color compression in most rectangular full array CCD/CMOS cameras, such as DSLRs. All the pixels in the image are captured at once, rather than one row at a time when scanned. It is the skill and experience of the manufacturer (Nikon, Kodak, and Canon) that produce the algorithms that deal with these digital compromises in the most effective manner. Bayer Pattern RGGB-mosaic implementation results in a "color pixel array" of four-pixel-groups mosaics that range in size from 9-18 um square. The spatial resolution remains based on the single-pixel size of 4.5-9 um.

Flatbed scanners and digital scanning back cameras do not have this problem because they use tri-linear arrays. Each pixels has individual R (red), G (green), and B (blue) data.

Recommendations for Digital SLR Cameras (with interchangeable lenses)

Resolution comparisons between average film types and digital file size indicate that today's megapixel cameras with 6, 8.2, 11, 12.2, 13.5, 13.7, and 16.6 MP sensors can compete with film by producing TIFF files that range from 18 to 50 MB (24-bit color) with native resolutions ranging from 2000 to 3300 ppi. Dan Kushel pointed out that a sensor resolution of 2400 ppi equals that of a photographic print, based on the limitations of humans

There is a Digital Documentation essay on the EMG site that contains detailed information on the comparison between film and digital, along with other pertinent imaging information too voluminous for inclusion here: <http://aic.stanford.edu/sg/emg/library/articles/documentation/vitale/2005-06-21_digital_documentation_001.pdf>

I no longer recommend fixed-lens digital cameras of any brand, because they make too many compromises and the lens cannot be saved for future use on a camera body with higher resolution.

viewing an 8 in. x 10 in. print. The data on lens resolution shows the limitations imposed by their use.

Examples of Resolution Using Both Digital, ppi (pixels per inch) and Film, lp/mm (line pairs per millimeter) Standards

lp/mm Film Type* — Averages	ppi	MTF@30%
Kushel Estimate:		
8x10 at 300-ppi	2400	47
Color Negative Film	3240	64*
Color Transparency Film	2684	53*
B&W (all eras)	4282	84*
B&W 1940 data only	2589	49*
B&W Modern Only	6400	126*
For Comparison – Single Films and some DSLRs		
Ektachrome 100	2290	45**
Ektachrome 100GX	3050	60**
Kodachrome 25	2689	53**
Fuji Velvia 100L	4064	80**
Fuji Velvia 50	3454	68**
Canon EOS 1Ds MkII	3528	69**
Nikon D2x	2848	56+
Kodak DCS	3205	63+
Canon EOS 20D	2344	46+
Nikon D70	2000	39+
Resolution Limitations imposed by Lens		
Old Large Format Lens	1016	20
Average Large Format Lens	2032	40
Good Large Format Lens	3036	60
Excellent Large Format Lens	4048	80
Good SLR Lens	5060	100
Very Good SLR Lens	10120	200
Superior SLR Lens	30360	600

* Pulled from author's essay on recommendation of digital Imaging on the EMG website

** Pulled from film manufacturer's data sheet found on the web or in official publications

+ No limit on contrast information in digital pixels, such as the "30% of full scale" for film, pulled from MTF curves.

Professional Photographers' Opinions

Professional photographers consider the Canon 1Ds (11 MP) and Kodak DSC SLR/n/c (13.5 MP) direct replacements for film because the resolution is equivalent to the average 35mm film without the lack of control inherent in a film-based workflow.

Check the excellent camera reviews and technical information website <<http://www.dpreview.com>> for camera specifications and images of known color targets and gray scales shot with the camera along with an average street price and a range of

vendors with current prices. Some of the reviews have lens resolution charts and images of the GretagMacbeth ColorChecker.

Being a long time Nikon user with several manual Nikkor lenses, I have direct experience using Nikon systems. I find all the buttons and wheels on digital cameras confusing and annoying, however, by using the Nikon Capture v4.1 software, you can run both the D70 and D100 bodies from a computer, avoiding most of those buttons.

I find the Nikon D70 SLR (6 MP) with the 24-120 mm zoom lens (\$450-700) to be a very good replacement for the standard Nikon F3-5 body, using the 55 mm Micro lens (60 mm Micro today) system (about \$1900) and slide film.

The Kodak DCS SLR/n (Nikon F lenses) or /c (Canon EF lenses) is thought by many professionals to equal or exceed film because each of the 13.5M pixels (3000 x 4500, 41 MB TIFF file) can have up to 36-bit color depth (61 MB TIFF file, each pixel with 69 billion possible colors) using a standard-sized 24 x 36 mm CMOS sensor. On May 31, 2005 Kodak announced that it is discontinuing its high-end cameras in favor of consumer cameras; they will continue to support the DCS SLR/n/c through 2008.

Colleagues using the Canon EOS 20D (8.2 MP) and EOS 1Ds (11 MP) and the newest EOS 1Ds II (16.6 MP) find them to be very good. If you already have EF Canon lenses, consider Canon's digital SLR bodies or the Kodak DCS SLR/c body.

I was recently shown the Pentax *ist DS, a 2008 x 3008, 6 MP (\$650) DSLR with both bayonet and thread mounts (using an adapter). This is a very good way to enter the digital market using older thread mount lenses that still have excellent optics, but in manual mode only. Unfortunately, at this time there is no tethering software. There is a review on the DR Review website <http://www.dpreview.com> that gets more thorough all the time.

Camera Selection Summary

I no longer recommend fixed-lens digital cameras of any brand, because they make too many compromises and the lens cannot be saved for future use on a camera body with higher resolution.

If you can afford the Kodak DCS SLR/n/c, it is equivalent to the best slide film resolution for about \$4000. Or wait, if you can, for the equivalent of the Kodak DCS SLR/n/c (13.5 MP) body to come down in price to \$1500-2000 in the next one to two years.

If you want to purchase your camera soon, look into the 6-8 MP Nikon, Canon,

[T]he easiest way to go digital is to purchase a 6 MP Nikon, Canon, or Pentax digital body and use your existing lenses.

and Pentax SLR bodies for around \$700-1500. You can use your existing manual lenses with most of these SLRs, but you lose many of the automated functions.

Be sure to purchase a lens that will cover the full 45 mm image circle of the 24 x 36 mm sensor, rather than the 30 mm image circle of 2/3-sized image sensors. Many so-called digital lenses acquire their "digital" moniker because they cover only the smaller image circle of the 2/3rds CCD/CMOS digital sensors. The inexpensive DX lens included in the Nikon D70 package (\$1000-1200 kit) is a 30 mm circle-of-view lens.

Modern auto focus (Nikkor AF and Canon EF) lenses with 45 mm circle-of-view can be moved to newer bodies of the same brand, with higher resolution and more features; in 2-3 years you will replace just the body not the lenses.

Thus, the easiest way to go digital is to purchase a 6 MP Nikon, Canon, or Pentax digital body and use your existing lenses. With your next imaging purchase, you can acquire a good 45 mm circle-of-view lens, taking full advantage of all cameras' automated features. When 11-13 MP DSLRs come down in price to around \$1000, trade up to the next digital body and save yourself the cost of a lens.

When you purchase from a "low price" vendor, check that the item is in stock and that all standard components are shipped in the package, not sold separately (a common ploy).

Best Digital Cameras

BetterLight, in the San Francisco Bay Area, make the finest digital cameras available. (<http://www.betterlight.com/comparison.asp>) They produce a range of high-resolution scanning backs that fit into 4x5 view cameras similar to a film holder. The Megapixel specifications range from 19 to 192 MP for the Super 8K-HS in the extended mode. The overall image noise (100:1 SNR) is quite low and

each pixel has 14-bits of native red, green, and blue data. Flash cannot be used, however, because scanning times range from 1-15 minutes depending on resolution and light available. Their ViewFinder software is unparalleled; all aspects of the image and color are under the operator's complete control.

Lens Limitations

It is difficult to find large format view camera lenses capable of resolving more than 40-50 lp/mm across a 150-180 mm circle-of-view. BetterLight is currently developing the next level of digital scanning back: 10200 x 13800 native resolution; 14836 x 20072 extended range. The development is limited by lens quality rather than electronics or software. A lens with 60-80 lp/mm is required for that scanning back. Lenses used on 35 mm cameras have resolution of 200-600-lp/mm, but their image circle is only 30-45 mm, rather than the 150-180 mm needed for a view camera. Any lens will degrade an image by about 25%, or limit the resolution based on its resolving capabilities. (See data in resolution chart above.)

Electronic Media Group

Consider joining the Electronic Media Group (EMG), which will be exploring digital documentation in great detail over the coming years through its standing committee on Digital Documentation. From time to time, the EMG listserv has spirited exchanges on digital documentation issues. I am a member of the EMG Digital Documentation Committee, but the preceding are my views.

—Tim Vitale
Conservation and Imaging Consulting
Preservation Associates, Emeryville, CA 94608;

Street Price	Camera	Body Type	Lens Mount	Mega Pixels	RAW File Size	RAW Bit Depth	Probable Pixel Size in Microns	Equivalent PPI	Raw Pixels in Sensor	Sensor Size
\$8,900	Canon EOS-1Ds Mark II	DSLR	Canon	18.8	14.8	12	5.0	3528	3328 x 4992	24.0 x 36.0
\$4,900	Kodak DCS SLR/canon	DSLR	Canon	13.5	na	12	5.6	3180	3000 x 4500	24.0 x 36.0
\$6,900	Canon EOS 1Ds	DSLR	Canon	11.0	11.4	12	6.2	2886	2704 x 4044	23.8 x 35.7
\$3,700	Canon EOS 1D Nk II	DSLR	Canon	8.2	8.3	12	5.7	2336	2336 x 3504	19.1 x 28.7
\$990	Canon EOS 350D (Rebel XT)	DSLR	Canon	8.9	8.3	12	4.5	2304	2304 x 3456	14.8 x 22.2
\$630	Canon EOS 300D (Rebel)	DSLR	Canon	6.3	7.0	12	5.2	2048	2048 x 3072	15.1 x 22.7
\$1,100	Canon EOS 20D	DSLR	Canon	8.2	8.7	12	4.5	2344	2344 x 3516	15.0 x 22.5
\$850	Canon EOS 10D	DSLR	Canon	6.3	6.0	12	5.1	2056	2056 x 3084	15.1 x 22.7
\$700	Pentax *ist DS	DSLR	Thread	6.0	na	12	5.4	2008	2008 x 3006	15.5 x 23.3
\$3,500	Kodak DCS 14n	DSLR	Nikon	13.7	na	12	5.6	3206	3024 x 4536	24.0 x 36.0
\$4,900	Kodak DCS SLR/nikon	DSLR	Nikon	13.5	na	12	5.8	3180	3000 x 4500	24.0 x 36.0
\$5,900	Nikon D2X	DSLR	Nikon	12.2	12.0	12	3.9	2948	2848 x 4272	15.7 x 23.8
\$1,000	Nikon D 100	DSLR	Nikon	6.0	6.0	12	5.4	2000	2000 x 3006	15.5 x 23.3
\$600	Nikon D 70S	DSLR	Nikon	6.0	6.0	12	5.5	2000	2000 x 3006	15.6 x 23.4
\$750	Nikon D 50	DSLR	Nikon	6.0	6.0	12	5.8	2000	2000 x 3006	15.6 x 23.4
\$2,000	Nikon D2H	DSLR	Nikon	4.0	4.0	12	6.6	1632	1632 x 2448	15.5 x 23.3
\$4,500	BetterLight 4000E-HS	Scan	Lg Format	19	53	14	19.2	1323	3750 x 5000	72.0 x 96.0
\$18,000	BetterLight Super 8K-HS	Scan	Lg Format	191	550	14	5.0-6.0	2822	8000 x 10600	72.0 x 96.0
\$23,000	BetterLight Super 10K-HS	Scan	Lg Format	298	850	14	7.0	3598	10200 x 15300	72.0 x 96.0



SPECIALTY GROUPS



ARCHITECTURE

AIC Annual Meeting: Thanks to Dorothy Krotzer for a fabulous ASG session at this year's annual meeting in Minneapolis. This year's theme was The Documentation Dilemma: Managing Conservation Data in the 21st Century. The seven papers were informative and very timely. All who attended walked away with much to think about as they approach their next documentation effort.

Elections 2005: The election results are in!!! Tobin Tracey will be our next Program Chair and Evan Kopelson will move into the Secretary/Treasurer office. Congratulations to Tobin and Evan! Also, as per our by-laws, Dorothy Krotzer will move into the Chair position and Guy Munsch will become our Chair Emeritus. And, by the way, the new bylaws changes were accepted during our business meeting by an overwhelming majority.

Thank you: This will be my last ASG column and I just wanted to say how much I have enjoyed serving ASG as Secretary/Treasurer for the last two years. See you in Providence next year!!

—ElizaBeth Bede Guin, ASG
Secretary/Treasurer,
[REDACTED]



BOOK AND PAPER

AIC Annual Meeting: The BPG session was a great success with inspiring presentations and a delightful reception at the Minnesota Center for Book Arts. I want to thank Holly Krueger, Program Chair, for coordinating our session and Betsy Haude, Assistant Program Chair, for arranging our reception. Their exceptional organizational skills made our program flow flawlessly.

Elections 2005: Election results were announced at the BPG business meeting. Congratulations to Jennifer Koerner who will serve as Assistant Program Chair and Chela Metzger as Secretary-Treasurer. Next year's nominating committee consists of Rachel Mustalish, Sylvia Rogers Albro, and myself. This winter we will be looking for candidates to serve as Chair and Assistant Program Chair. Interested individuals can contact me at [REDACTED].

Call for Papers: Next year's annual meeting will be held in Providence, Rhode Island, where BPG will celebrate its 25th anniversary. The deadline for submissions will be in early fall. Please contact Betsy Haude at [REDACTED].

BPG and the Conservation of Fine Art Program at Northumbria University are organizing a conference: Printed on Paper: The Techniques, History and Conservation of Printed Media. The conference will be held at the University in Newcastle-upon-Tyne, September 4-7, 2007. Proposals for presentations should be sent to Nancy Purinton at [REDACTED] by January 15, 2006.

Thank You: In addition to Holly

and Betsy, I am grateful to our committee members, outgoing Secretary-Treasurer Shelly Smith, and Assistant Chair Elmer Eusman for their hard work and commitment this year. And I thank all of you for the opportunity to serve the BPG.

—Kimberly Schenck, Chair
[REDACTED]



CIPP

Elections 2005 and Thanks: As the outgoing Chair of CIPP, I leave the group in the capable hands of Susan Barger. Our new Co-Chair is M.J. Davis. I thank outgoing Director Ria German-Carter and welcome Alexandra Klingelhofer. Thanks to the outgoing nominating committee board member Marianne Marti. We also welcome our new nominating board member, Patricia O'Regan. Many thanks to Jill Whitten for the exceptional venue for the CIPP dinner, and Sarah Melching for the superb job on the luncheon. Peter Verheyen deserves all of our thanks as he was our Webmaster. He has resigned and Jan Hessling, our Secretary, will be taking on that mantle. Randy Ash will serve another year as Treasurer. Thank you, Randy.

Membership: We are looking to increase our membership and hope that if you are interested in CIPP you will join. We encourage our members to get involved and share their opinions on the listserv.

Insurance Issues: Insurance was the hot topic at this year's business dinner. As with any new product, please be informed of the pros and cons; educate yourself as you might not be aware of



what you are getting into.

As Chair Emeritus, I thank everyone for giving me this opportunity to serve you.

—Jean Easter, CIPP Chair



ELECTRONIC MEDIA

AIC Annual Meeting: The EMG session, assembled by Program Chair Marlan Green, was a great success. We heard fascinating papers about the documentation and preservation of New York Downtown art and net.art by representatives of the Fales Archives at NYU, rhizome.org, Franklin Furnace, and IMAP (Independent Media Art Preservation), and three talks on conservation and exhibitions, video preservation, and on-line conservation documentation. Congratulations to Marlan for presenting a stimulating program.

Elections 2005: Your officers continue for one more year as they complete their two-year terms: Will Real, Chair; Marlan Green, Program Chair; Sarah Stauderman, Assistant Program Chair; Kate Murray, Secretary/Treasurer; and Hannah Frost, Webmaster.

Future Plans: We have already begun planning activities for the coming year. During this year's general session on documentation, there was great interest from the AIC membership in making the transition to effective digital documentation. Since one of EMG's missions is to offer this kind of expertise to the membership, we have a significant role to play in facilitating this transition. This would be a great time to

get involved in EMG and contribute to the digital transition effort. Please consider joining us.

—William Real, EMG Chair

realw@CarnegieMuseums.org



OBJECTS

AIC Annual Meeting: The OSG program in Minneapolis was a great success thanks to our excellent speakers. I would like to recognize the work of Sheila Paige and Mary Striegel who kept program chairs closely coordinated with each other and AIC. The joint tips session with the RATS group, presented by Jamie Martin, resulted in a great opportunity for objects conservators and conservation scientists to share their experiences with the difficult task of sampling for analysis. We look forward to preparing the postprints for the talks and tips session as swiftly as possible. The deadline for postprint submissions is August 31st. The minutes for the OSG business meeting are on the OSG website, and I encourage you to look through them. I can't thank everyone for all the work they put forth to make the conference happen—it was a great web of teamwork. Thanks to you all.

Elections 2005: The OSG chair positions have shifted. I would like to thank David Harvey, who completed his term as Emeritus Chair, for his hard work over the past three years. Alice Paterakis now holds the Emeritus position, and myself, Julie Wolfe, will act as Chair. We gratefully welcome Katherine Holbrow as the new incoming Program Chair.

OSG Committees: The OSG Publications Committee announces the end of Ellen Pearlstein's term as Chair, and thanks her for her hard work in

this department. Gratefully, Elizabeth Hendrix has agreed to fill the Chair position. The committee is looking for volunteers, so please contact Elizabeth if you are interested. The OSG Outreach Committee is looking for a new Chair as Jean Portell would like to pass on the position if possible. Please let me know if you are interested. Currently, the OSG needs to focus on building a strong Certification Committee that can be our liaison with AIC. The primary goal of the committee is to prepare a body of knowledge that all conservators, regardless of specialty, should know. Again, volunteers are needed so if you are able to assist with the Certification Committee in any way, please contact me.

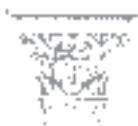
—Julie Wolfe, OSG Chair



PAINTINGS

AIC Annual Meeting: What a way to start the summer! This year's conference in Minneapolis was fantastic. The PSG session was well attended and the presentations were exceptional. Based on PSG's vote at last year's business meeting, we were able, for the first time, to feature an international guest speaker to open this year's session. David Saunder's lecture was truly a highlight. The success of this year's program could not have been possible without all of the hard and thoughtful work carried out by our Program Chair, Elise Effmann. The strength of our specialty group is truly the result of all of its members, so special thanks to everyone who helped.

PSG Postprints: The postprints from last year's annual meeting have been completed and have been sent out to members of PSG. If there is anyone who has not yet received a copy of the



postprints, please contact Jessica Oplak in the AIC office and she will send you a copy. Special thanks go to Helen Mar Parkin for all of her hard work. As a result, we are very fortunate to have some of the many interesting paintings-related lectures presented at last year's general session included in the postprints.

Workshops: It is not too late to register for the AIC-sponsored workshop, *Varnishes for Paintings: Results from Recent Research and Practical Application*, instructed by E. René de La Rie, Jill Whitten, and Robert Proctor. It will be held at the St. Louis Art Museum in Saint Louis, Missouri on July 21-23. The workshop comprises lectures, demonstrations, and practical sessions, providing up-to-date knowledge of varnishes. Registration information can be found on the AIC Web site at: <http://aic.stanford.edu>.

Certification Committee: As you may know, AIC is moving toward establishing a certification program and has appointed the Certification Development Committee (CDC) to direct this process. The ultimate goal of the CDC is to devise, and submit to the AIC membership for approval, a practical, effective, and equitable procedure for certification. A number of strategies have been proposed for achieving the objective, and the specialty groups are expected to play a major role in addressing these key activities. The specialty groups have been asked to help identify the knowledge base that will serve as the foundation of the certification exam, and develop the exam questions.

As an initial step, PSG will be forming an internal working group to deal with the matter of certification program development. PSG is seeking members who are interested in being part of these working groups. In order to make a well designed, acceptable program, we need input from our membership and are seeking volunteers who are willing to be part of the PSG

Certification Committee. I recognize the time constraints and limitations involved in volunteering, but certification has become a pressing issue in our field and we need your help. The best way to make things happen is to be part of the action. So, if you are interested in volunteering or have any questions, please contact me.

Conservation News: If anyone is working on interesting projects that they would like to share with the rest of the group, please feel free to contact me as I'm hoping to dedicate a section of each newsletter column to highlighting particular paintings conservation projects, current research, and news regarding different paintings studios or labs within a specific city. I look forward to hearing from you.

It was so nice to see everyone who attended this year's conference and I hope everyone enjoys the rest of the summer!

—Nica Gutman, PSG Group Chair



PHOTOGRAPHIC MATERIALS

Elections 2005: It is with great pleasure that I introduce the new PMG officers. Marc Harnly has generously agreed to serve as Chair for the next two years. Marc is in the Department of Paper Conservation at the J. Paul Getty Museum, and can be reached at [redacted] or [redacted]. Laura Downey Staneff is our new Program Chair, and she can be reached at Silverpoint Art Conservation, LLC, [redacted], or [redacted]. Dana Hemmenway starts her second term as Secretary/Treasurer, and can be reached at [redacted], or at dhem@loc.gov.

Thank you: As outgoing Chair, I thank Paul Messier for his excellent programs and the other members of the Executive Committee for all of their input, insight, and support. It has been an honor to serve as Chair, thank you for the opportunity.

Other News: We had a near record-breaking turnout at our annual meeting session. Although no head count was taken during the papers, we did have 13 people who remained to attend the business meeting, not including the officers and speakers. So Rosaleen won the bet that our meeting would have more than 10 in attendance!

—Thomas M. Edmondson, (Ex)PMG Chair

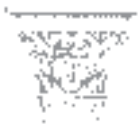
[redacted]
nmg5@nyu.edu



RESEARCH AND TECHNICAL STUDIES

Thank You: This is my last column as Chair and I'd like to thank everyone who has worked so hard this year, in particular the other RATS officers: Jamie Martin, Vice Chair, and Joe Swider, Secretary/Treasurer. You will hear more details from Jamie in the next column, but since I've just returned from the annual meeting, I would also like to thank all of the speakers from the Polymers session as well as everyone who contributed to the Tips session. There was lots of great information shared by everyone, so thank you so much for presenting. Also, thank you to the Edward Waldo Forbes Fund for Scientific Research, Freer Gallery of Art, for being a sponsor of the Polymers session.

Elections 2005: Ballots are being sent out a bit later than anticipated, but you hopefully will have received them



BPG



RATS



by the time you read this column. Many thanks to Charles Phillips, Chair of the Nominating Committee, for all of his effort. We have a fantastic slate of candidates this year: Paul Benson for Vice Chair and Cindy Connelly Ryan for Secretary/Treasurer. Along with Jamie who returns as Chair, they are going to do a great job in the coming year. There are already plans in the works and I'm sure you will hear more about them in the coming AIC News columns.

—Ellen Chase, *Outgoing Chair*



TEXTILES

Elections 2005: The TSG Nominating Committee is pleased to announce new officers for 2005-2006. Ann Frisina is Vice Chair and Anne Murray is Secretary. Nancy Pollak progresses to Chair and Sarah Stevens continues as Treasurer. These officers, along with chairs from each standing committee, comprise the TSG Board.

Thank you: Many thanks to all who generously served the TSG this past year. Beth McLaughlin completed her second term as Secretary. Our Postprints editors were Robin Hanson, Julie Randolph, and Kathleen MacKay. Kathy Francis, Deborah Trupin, Nancy Love, and Nancy Pollak continued as Catalogue editors. The Nominating Committee included Melanie Sanford, Vicki Cassman, and Zoe Perkins. Fran Mayhew was TSG Archivist, Claudia Iannuccilli was ASTM Liaison, and Yadin Larochette was CNCT Co-liaison. Two new committees were added: the Web

Committee chaired by Melanie Sanford with Anne Murray, Renee Walker, Beth Szuhay, and Camille Meyers Breeze, and the Study Trip Committee chaired by Susan Adler with Ann Frisina and Yadin Larochette. Rebecca Rushfield continued to manage our e-distribution list, TSG Announce.

TSG Certification Working Group: Please consider contributing to the very important undertakings of this group. Participation from a representative cross-section of textile conservators is essential as we work to shape the future of our profession.

—Kathleen Kiefer, *Outgoing TSG Chair*



WOODEN ARTIFACTS

AIC Annual Meeting: The Wooden Artifacts Group session in Minneapolis came off without a hitch. Program Chair Randy Wilkinson assembled an excellent selection of presentations and ran a smooth and professional show. The half-day format was a real success and reflected the hard work of the specialty group chairs and AIC staff. Thanks to them, to Randy, and to all the presenters.

Elections 2005: An election was held at the WAG Business Meeting on Saturday. Randy Wilkinson will be Chair for the next two years. Peter Muldoon was elected Program Chair for next year's session in Providence, Rhode Island. Kathy Gillis will serve as Treasurer. We are fortunate to have these committed people on the job. Thanks to Richard

Branyon, who completed his tenure as Treasurer this year.

Thank you and thoughts for the future: I was proud to have been involved with AIC and WAG over the last two years. We are a diverse and vibrant group, sometimes quietly so and sometimes more forthrightly. This is our strength. AIC is continuing to organize and energize itself. This will be reflected in increasing responsibility and opportunity for WAG. Issues related to certification, publications, communication, professional development, membership, and other activities will require attention. For many of us, energy levels are high right after an annual meeting. Let's maintain that energy and help our new Chairman coordinate a WAG that serves its membership in the best possible way.

—Jeff Moore, *outgoing WAG Chair*



OSG Postprints on Sale

OSG Postprints are on sale January 2005 through January 2006 at a cost of \$7 (plus postage) each to anyone interested! Available Editions: 1994-97, 1999-2002.

Contact info@aic-faic.org for confirmation or with any questions. Submit publication order form with payment for prompt delivery of order.

COURSES, CONFERENCES, AND SEMINARS

CALL FOR PAPERS

May 16-19, 2006. "Modern Paints Uncovered." Symposium co-organized by the Getty Conservation Institute, the National Gallery of Art, and the Tate. London, UK—Contact: MPU@tate.org.uk; www.getty.edu/conservation/science-modpaints/mpu.html; deadline for submissions of abstracts is September 7

GENERAL

AIC Ongoing "Business and Management Practices for Conservators: Marketing and Outreach Skills for Conservators," and other distance learning courses. Contact: Eric Pourchot, AIC, (202) 452-9545, ext. 12; Fax: (202) 452-9328; [REDACTED]; registration forms at www.aic-faic.org

AIC August 5-7. "The Modular Cleaning Program," in partnership with Intermuseum Conservation Association. Cleveland, OH—Contact: Sandra Williamson, [REDACTED] or Wendy Partridge, [REDACTED]; (216) 658-8700; www.icaartconservation.org

AIC August 15-19. "Adhesives for Conservation," in partnership with the Gerald R. Ford Conservation Center. Omaha, NE—Contact: Eric Pourchot; AIC, (202) 452-9545, ext. 12; Fax: (202) 452-9328; [REDACTED]; registration forms at www.aic-faic.org; special FAIC Individual Professional Development Scholarships available

August 27-29. "2004 WAAC Annual Meeting," Western Association for Art Conservation. Cody, WY—Contact: Beverly Perkins, [REDACTED]

September 10-16. "Our Cultural Past—Your Future." ICOM-CC 14th Triennial Meeting. The Hague, The Netherlands—

Contact: www.icom-cc.icom.museum; ICOM-CC Secretariat, secretariat@icom-cc.org

September 12-16. "Recovery of Wet Materials Following a Disaster," in partnership with the Campbell Center for Historic Preservation Studies. Mount Carroll, IL—Contact: Campbell Center, (815) 244-1173; Fax: (815) 244-1619; campbellcenter@internetni.com; www.campbellcenter.org. Special FAIC Individual Professional Development Scholarships available

AIC September 19-23. "Adhesives for Conservation," in partnership with the National Park Service. Shepherdstown, WV—Contact: Eric Pourchot; AIC, (202) 452-9545, ext. 12; Fax: (202) 452-9328; [REDACTED]; registration forms at www.aic-faic.org; special FAIC Individual Professional Development Scholarships available

September 21-25. "Lacona VI: Lasers in the Conservation of Artworks." Sixth International Conference. Vienna, Austria—Contact: Mag. Johann Nimmricher, Bundesdenkmalamt, Amtswerkstätten für Kunstdenkmale, Arsenal Oblekt 15, Tor 4, A-1030, Vienna, Austria; +43 (0)1 7982146 37; Fax: 43 (0)1 7982146 49; office@lacona6.at; www.lacona6.at

September 21-24. "History's Mysteries." American Association for State and Local History (AASLH) and the PA Federation of Museums and Historical Organizations (PFMHO). Pittsburgh, PA—Contact: www.aaslh.org

September 22-24. "The Best in Heritage." International Heritage Forum. Dubrovnik, Croatia—Contact: www.TheBestInHeritage.com

September 25. 19th Annual

Preservation Conference. National Archives and Records Administration (NARA)

Washington, DC—Contact: Richard Schneider, [REDACTED]; [REDACTED]

September 27-October 1. "National Preservation Conference." The National Trust for Historic Preservation. Portland, OR—Contact: www.ntpconference.org

September 29-October 1. "Leadership Exchange in Arts and Disability (LEAD) Training and Conference." Scottsdale Center for the Arts & Mesa Arts Center Conference. Scottsdale, AZ—Contact: (202) 416-8727; access@kennedy-center.org; www.artability.org

AIC September 30. "Writing for Conservation Publication." Los Angeles, CA—Contact: Eric Pourchot, AIC; [REDACTED], ext. [REDACTED]; Fax: (202) 452-9328; [REDACTED]; Registration forms at www.aic-faic.org

October 19-23. Musei & Musei Biennial Conference and Exhibition. Brescia, Italy—Contact: arca3@tin.it; www.museimusei.com

October 26-28. "Museums and Success." Association of Midwest Museums Annual Conference. Cincinnati, OH—Contact: Brian Bray, AMM, P.O. Box 11940, St. Louis, MO 63112; (314) 746-4557; Fax: (314) 746-4569; midwesternmuseums@aol.com

November 9-11. "Science, Technology and Cultural Heritage." Workshop organized by The Italian Vacuum Association (AIV) and the Italian Association of Macromolecules (AIM). Catania, Italy—Contact: www.aiv.it/aiveventi2/

February 15-18, 2006. "International Trade Fair for Museums, Restoration,

COURSES, CONFERENCES, AND SEMINARS

and Cultural Heritage.”

Munich, Germany—Contact:

Koelmesse GmbH, Messeplatz 1, 50679
Köln, Germany; +49 221 821-0; Fax:
+49 221 821-2574; www.exponatec.de

September 3-8, 2006. “The Object in
Context: Crossing Conservation
Boundaries.” Part of the 21st IIC
International Congress co-organized by
the Doerner Institut and the Bayerische
Staatsgemaldesammlungen.
Munich, Germany—Contact:
www.iiconservation.org

ARCHITECTURE

July 20-23. “In the Middle of It All:
Creating a Legacy.” League of Historic
American Theaters (LHAT) Annual
Conference & Theater Tour.
Kansas City, MO—Contact: Colleen
Poehlman; [REDACTED];
info@lhathat.org; or Diane Ludman Frank,
Public Relations; [REDACTED];
[REDACTED]; www.lhathat.org

October 17-21. “Monuments and Site
in their Setting: Conserving Cultural
Heritage in Changing Townscapes and
Landscapes.” 15th ICOMOS General
Assembly and International Symposium.
Xi’an, China—Contact: ICOMOS,
International Secretariat, 49-51 Rue de
la Federation, 75015, Paris, France; +33
(0)1 45 67 67 70; Fax: +33 (0)1 45 66
06 22; www.icomos.org

BOOK AND PAPER

July 14-17. “Navigating Texts and
Contexts.” 13th Annual Society for the
History of Authorship, Reading, and
Publishing (SHARP) Conference.
Halifax, Canada—Contact:
www.dal.ca/SHARP2005

July 22-25. “The Changing Book:
Transitions in Design, Production, and
Preservation.” University of Iowa
Library Exposition.
Iowa City, IA—Contact:

www.lib.iowa.edu/book2005/

August 20-September 9. “From East to
West: Japanese Conservation
Techniques—Western Prints and
Drawings.” Japanese Paper
Conservation Workshop.
Brussels, Belgium—Contact: Anne
Lienardy, Ecole nationale supérieure des
arts visuels de la Cambre, Abbaye de la
Cambre, 21, B-1000 Brussels, Belgium;
Fax: +32 26 40 96 93;
[REDACTED]
www.lacambre.be

July 27-29, 2006. 5th IPC International
Conference.
Edinburgh, UK—Contact: Barbara
Venerables, c/o the IPC Office, Bridge
House, Waterside, Upton-upon-Severn,
WR8 0HG, UK; +44 (0)1684 59110;
Fax: +44 (0)1684592380; informa-
tion@ipc.org.uk

September 5-7, 2007. “Printed on
Paper.” Northumbria University.
Newcastle-upon-Tyne, UK—Contact:
Nancy Purinton, [REDACTED];
[REDACTED]

ELECTRONIC MEDIA

November 14-19. “Raumkunst: Video
Installations, Electronic Artworks.” 2005
Conference of the VDR Restorers.
Berlin, Germany—Contact: Ulrich
Lang, Museum für Moderne Kunst,
Domstr. 10, D-60311, Frankfurt-am-
Main, Germany; +49 69 212 33 719;
Fax: +49 69 212 37 882;
el_media@conserve-art.de

OBJECTS

July 18-25. “Ancient and Historic
Metals: Technology, Microstructure, and
Corrosion.” UCLA Cotsen Institute of
Archaeology.
Los Angeles, CA—Contact: www.sum-
mer.ucla.edu/institutes

September. “Studies of the Sculptural
Arts of Asia Using Scientific Methods.”

Third Forbes Symposium.

Washington, D.C.—Contact: Forbes
Symposium 2005, DCSR, Freer Gallery
of Art, Arthur M. Sackler Gallery,
Smithsonian Institution, Fax: (202) 633-
9474; dcsr@asia.si.edu;
www.asia.si.edu/visitor/dcsrSymposium
.htm

PAINTINGS

AIC July 21-23. “Varnishes for
Paintings: Results from
Recent Research and Practical
Applications,” in partnership with the
St. Louis Art Museum.
St. Louis, MO—Contact: Eric Pourchot;
AIC (202) 452-9545, ext. 12; Fax: (202)
452-9328; [REDACTED]; reg-
istration and scholarship forms at
www.aic-faic.org; special FAIC
Individual Professional Development
Scholarships available

PHOTOGRAPHIC MATERIALS

August 20-25. “Preserving Photographs
in a Digital World.” Sponsored by
George Eastman House and the
Rochester Institute of Technology and
Image Permanence Institute.
Rochester, NY—Contact: Stacey
VanDenburgh; (585) 271-3361, ext.
323; seminar@geh.org; www.imageper-
manenceinstitute.org

October 26-28. “Seminar on
Photographic Preservation:
Identification and Preservation of
Photographic Collections.” Balaam-Art.
Barcelona, Spain—Contact: Mireia
Xarrie, [REDACTED]; info@balaam-
art.com; www.balaam-art.com

TEXTILES

September 10. “The Preservation of
Religious Textiles.” Dutch Textile
Committee Symposium preceding
ICOM-CC 14th Triennial Meeting
The Hague, The Netherlands—
Contact: www.textielcommissie.nl

COURSES, CONFERENCES, AND SEMINARS

November 9-11. "Recovering the Past: The Conservation of Archaeological and Ethnographic Textiles." 5th Biennial North American Textile Conservation Conference.

Mexico City, Mexico—Contact: Rosa Lorena Roman Torres; [REDACTED]

WOODEN ARTIFACTS

July 13-16. "Cleaning and Preserving Finishes on Furniture." New England Conservation Association. Co-sponsored by AIC.

Haverhill, MA—Contact: Jon Brandon, [REDACTED]

COURSE OFFERINGS

The American Academy of Bookbinding Courses

Telluride, CO—Contact: AAB, P.O. Box 1590, Telluride, CO 81435; (970) 728-3886; www.ahhaa.org
American Association of Museums (AAM) Current Issues and Best Practices in Museum Management (October 21-22) Denver; www.aam-us/org

Balaam Art Courses

Heritage Biocare (September 1-3); History and use of Medieval Pigments (September-October); Workshop in Conservation of Tiles and Tile Pictures (October)

Barcelona, Spain—Contact: +34 93 4171347; Fax: +34 93 2123715; info@balaam-art.com; www.balaam-art.com

Campbell Center for Historic Preservation Studies, 2005 Course Schedule

Care of Collections Courses:

Emergency Preparedness, Response & Recovery (July 6-9); Care of Furniture (July 11-14); Care of Works of Art on

Paper (July 11-14); Photographic Documentation & Digital Imaging of Museum Collections (July 11-14); Care of Paper Artifacts (July 18-21); Design & Construction of Mounts for Exhibits (July 27-30); Care of Textiles I (August 3-6); Exhibit Design for the Small Museum (August 3-6); Care of Photographic Collections I (August 8-10); Care of Textiles II (August 8-10); Ethnographic Artifacts of Mixed Composition (August 9-12); Mannequin Workshop (August 9-12); Care of Photographic Collections III (August 11-13); Writing Interpretive Exhibit Labels (August 15-16); Care of Leather and Fur (August 15-18); Care of Plastics (August 15-18); Preservation of Archives (August 24-27); Collections Management in Storage (September 12-16); Care of Book Collections (September 18-21); Computer Software for Collections Management (September 19-21); Advanced Techniques in Matting (September 19-23); Book Collection Maintenance and Repair I (September 22-24); Book Collection Maintenance and Repair II (September 26-19); Care of Stained Glass and Leaded Glass (October 6-9)

Conservation Refresher Courses:

Pulp Repair Techniques for the Paper Conservator (August 24-27); Recovery of Wet Materials Following a Disaster (September 12-16); Spot Testing for Materials Characterization (September 14-18); Mastering Inpainting (September 28-October 1)

Historic Preservation Courses:

Historic Structure Reports & preservation Maintenance (July 14-16); Preservation of Historic Flat Plaster (July 18-20); Preservation of Ornamental Plaster (July 21-23); Masonry Analysis & Testing Workshop (July 27-30); Preservation of Cemeteries (September 12-15); Gilding III (September 21-24); Gilding I (September 26-29)
Mt. Carroll, IL—Contact: Campbell Center,

campbellcenter@internetni.com;
www.campbellcenter.org
Centre for Photographic Conservation Courses
In-House Training Course and Lecture Programs, United Kingdom—Contact: Angela Moor, [REDACTED];
Fax: +44 020-8314 1940;
xf59@dial.pipex.com;
www.cpc.moor.dial.pipex.com
Conservation Center, Institute of Fine Arts, New York University, Conservation Workshops
Contact: Shelley Sass, Program Coordinator, sks3@nyu.edu
Conservation Technologies (NMGM), Conservation Center, Liverpool, England
(September 8-9; November 21-22);
Contact: Dr. Martin Cooper,

[REDACTED]
uk; +44 151 478 4904
Galway-Mayo Institute of Technology Course. Furniture Conservation and Restoration Course (three-year degree program)
Letterfrack, Ireland—Contact: Henning Schulze; [REDACTED]; or Angelika Rauch; [REDACTED]; Galway-Mayo Institute of Technology, Letterfrack Campus, +353 95 41 660; Fax: +353 95 41 112; www.gmit.ie
Illinois Digitization Institute at the University of Illinois Library at Urbana-Champaign, Online Courses;
Contact: Amy Maroso, Project Coordinator, 61801; maroso@uiuc.edu; <http://images.library.uiuc.edu/projects/idi>

International Academic Projects, Courses: Pigments and the Polarising Microscope (July 4-8, Somerset, UK); Polymers and Conservation (July 11-15, London, UK); Identification of Wood (July 11-15, London, UK); Advanced Microscopy of Pigments (July 11-15, London, UK); Methods of Cleaning Painted Surfaces (July 18-22, London, UK); The Preservation of Medieval Books (August 1-30, Italy); Conservation of Ecclesiastical Textiles

COURSES, CONFERENCES, AND SEMINARS

(September 19-23, Crete, Greece)
Contact: Alice Thompson, Assistant Coordinator, International Academic Projects, 6 Fitzroy Square, London W1T 5HJ, United Kingdom; Tel: 44 207 380 0800; Fax: 44 207 380 0500; www.academicprojects.co.uk; info@academicprojects.co.uk

The Laboratory Safety Institute Seminars and Workshops

Nationwide—Contact: LSI, (800) 647-1977; Fax: (800) 303-4289; labsafe@aol.com; www.labsafety.org
Lascaris Conservation of Works of Art Courses on Conservation.
Halkida, Evia Island, Greece—Contact: Mihail Larentzakis-Lascaris, P.O. Box 172, 34100 Halkida, Greece; Tel/Fax: +30/22210/21981;

Multimodal Hazardous Materials Transportation Training Seminar
Various locations and dates—Contact: Suezett Edwards, U.S. Department of Transportation, (202) 366-4863
National Preservation Institute Consultations with Indian Tribes on Cultural Resource Issues Historic Structures Reports and Preservation Maintenance (July 14-16, Mount

Carroll, IL)
Contact: Jere Gibber, Executive Director; National Preservation Institute, [REDACTED], Alexandria, VA 22313; [REDACTED]; Fax: [REDACTED]; info@npi.org; www.npi.org

Rutgers University School of Communication, Information and Library Studies' Biennial Preservation Management Institute

Contact: Karen Novick, Rutgers University, 4 Huntington St., New Brunswick, NJ 08901-1071; (732) 932-7169; Fax: (732) 932-9314; <http://scils.rutgers.edu/pds/pmi.jsp>

SOLINET Courses

Contact: Vanessa Richardson; (800) 999-8558; Fax: (404) 892-7879; [REDACTED]
www.solinet.net
West Dean College Courses
UK—Contact: Patricia Jackson, Building Conservation Masterclasses Coordinator, c/o West Dean College, West Dean, Chichester, West Sussex, PO18 0QZ; Tel: 01243 81894/811301; Fax: 01243 811343; pat.jackson@west-dean.org.uk; www.westdean.org.uk

Weymouth College Higher National Diploma in Applied Architectural Stonework and Conservation
Weymouth, UK; www.weymouth.ac.uk
Worcester Polytechnic Institute & Higgins Armory
Worcester, MA—Contact: Cristina Bauer, Internal Project Coordinator; [REDACTED], ext. 23; Fax: (508) 852-7697; cbauer@higgins.org; www.wpi.edu/+mcsi

AIC Professional Development is at Work for You!



The AIC logo in the calendar indicates workshops funded or co-sponsored by the new professional development endowment. Most events are hands-on, treatment-oriented workshops ranging from one to five days in length, and are offered at affordable prices. Check the Professional Development section of the AIC website (www.aic-faic.org) for full details, updates, and registration materials, or call (202) 452-9545, ext. 12.



2005 AIC Annual Meeting Abstracts Now on Sale

Did you miss out on the 2005 AIC Annual Meeting?

Discover what everyone is talking about—order a copy of the 2005 AIC Annual Meeting Abstract Book. Read about the latest treatments and techniques by the field's experts chosen to present at the Annual Meeting. Cost is only \$10 plus postage for AIC members.

Restock your library for the Fall. Order the 2005 AIC Abstract and many other AIC publications online by visiting the publication section of the AIC website or call AIC at 202-452-9545.

POSITIONS, INTERNSHIPS, AND FELLOWSHIPS

ST. MARK'S FINE ARTS CONSERVATION AND RESTORATION

Paper and painting conservator

St. Mark's Fine Arts Conservation and Restoration in Houston, Texas has an opening for a full-time paper conservator who has also had experience with painting conservation. For further information, please contact Mercedeh at [REDACTED] or at loro@wt.net.

AMON CARTER MUSEUM

Paper Conservator

The Amon Carter Museum seeks applicants for the position of Paper Conservator. This new position is supported by a grant from the Andrew W. Mellon Foundation and is on track for endowment. The responsibilities of the conservator will be to examine, develop treatment specifications for, and treat works on paper; provide expertise regarding the care and treatment of illustrated books; conduct condition surveys, analyze results, and assist in developing action plans; develop an annual plan for preservation and conservation; provide original research on the permanent collection as related to special exhibition and publication projects; participate in educational programs and emergency response and environmental control initiatives; perform courier duties. Requirements include an advanced degree in art conservation, specializing in the conservation of works on paper; minimum five years' experience working in a museum conservation facility; demonstrated excellence performing complex conservation treatments; in-depth knowledge of the history, materials, and techniques of drawing and printmaking; working knowledge of chemistry and materials science; strong organizational skills; ability to work collaboratively; excellent oral and written communications skills, experience with MS Office, Photoshop, and database knowledge. Salary and benefits are competitive. Send queries, resume, and references to

H.R. Manager,
Amon Carter Museum
3501 Camp Bowie Blvd.
Fort Worth, TX 76107
fax (817) 989-5149
athy.goodale@cartermuseum.org
EEOC.

YALE CENTER FOR BRITISH ART

Assistant or Associate Conservator

Full-time permanent position for an assistant or associate conservator specializing in conservation of works of art on paper. Conservation experience with rare books and photographs is preferred, but not required. Under the general direction of the Yale Center's chief conservator, responsibilities include: care, examination, treatment, documentation, and technical analysis of a wide range of art on paper and related materials for permanent collection, exhibitions, and loans. The assistant/associate conservator will participate in departmental activities, including lecturing, training interns, and general maintenance of the lab. The Yale Center of British Art has the largest collection of British art outside of England. Some time will be devoted to working on the comprehensive collection of European and American works of art on paper and some Asian materials owned by the Yale University Art Gallery. Applicants should have an advanced degree from a conservation program or equivalent training and the ability to design and carry out skilled treatments to the highest standards. Qualifications include strong communication and analytical skills; the ability to work independently and with others; strong computer skills; and the ability to excel in a dynamic team environment.

Salary and Benefits: Rank and competitive salary will be based upon the successful candidate's qualifications and experience. Full benefits package includes 22 vacation days; 18 holidays, recess, and personal days; comprehensive health care; TIAA/CREF or Yale retirement plan; and relocation assis-

tance. Applications will be accepted until the position is filled. Informal inquiries can be directed to:

[REDACTED]
Applications should consist of a cover letter, resume, and the names of three references, and should be mailed to:

Corey Rossman
Yale University Department of
Human Resources
55 Whitney Ave.
New Haven, CT 06517

Please be sure to include Source Code: CCRM22135 (Conservator II).

Yale University is an Affirmative Action/Equal Opportunity Employer.

PHILADELPHIA MUSEUM OF ART

Mellon Fellowship in Costume & Textiles Conservation

The Philadelphia Museum of Art offers a one-year Mellon Postgraduate Fellowship in Costume & Textiles Conservation, beginning October 3, 2005. Applicants should be graduates of a recognized conservation training program or have equivalent experience. The Fellow will examine, conduct research, and perform treatment on costume and textiles in the Museum collection, and participate in preservation activities throughout the Museum.

Each fellowship includes a stipend of \$27,500, health insurance, \$3,000 in travel funds and \$2,000 for research support. Applicants should send a letter with a statement of interest; a resume; transcripts of graduate and undergraduate courses; several samples of examination reports and treatment records with photographs, including any published treatments or research; and two supporting letters from conservation professionals familiar with the candidate's work to: Sara Reiter, Associate Conservator of Costume & Textiles, Philadelphia Museum of Art, PO Box 7646, Philadelphia PA 19101-7646. All application materials must be received by September 1, 2005. EOE

POSITIONS, INTERNSHIPS, AND FELLOWSHIPS

Senior Conservator for Fine Arts Conservancy in West Palm Beach, Florida. Painting restoration/conservation. Examination, technical analysis, written, photographic documentation, and treatment of traditional and contemporary works. Bachelors Degree in Fine Art plus two years' experience in job offered. Fax resume to: (561) 684-8505 or email to: lab@art-conservation.org

THE VIRGINIA HERRICK DEKNATEL PAPER CONSERVATION LABORATORY MUSEUM OF FINE ARTS, BOSTON

Associate Conservator

Applications are being accepted for the position of the Sandra B. Lane Associate Conservator. Reporting to the Head of Paper Conservation, candidates should have graduated from a recognized graduate program of conservation or have comparable experience. In addition, several years of experience in paper conservation beyond graduate training is required, and demonstrable experience is also required in the field of conservation of photographic materials, inasmuch as the position will be especially involved in providing for the long term care, treatment, and technical assessments of the Museum's growing collections of art photography. Skill in oral and written communication is essential, as is an ability to work effectively as part of a team.

Compensation includes salary and a generous benefits package. For consideration, please submit the following: a cover letter summarizing your interests, resume, and two letters of recommendation to:

Sandra Matthews, Senior
Employment Officer
Human Resources
Museum of Fine Arts, Boston
465 Huntington Avenue
Boston, MA 02115

ANDREW W. MELLON FELLOWSHIP IN PAPER CONSERVATION

Worcester Art Museum

The Worcester Art Museum is offering an advanced fellowship in the conservation of works of art on paper beginning in the fall of 2005. The appointment is for one year with the possibility of renewal for an additional year. The fellow will have the opportunity to work with the Museum's collections in the departments of Prints, Drawings and Photographs, Asian Art, and Contemporary Art. The fellow will participate in activities such as examination, treatment, analysis, and exhibitions, and will interact as a staff member with other Museum departments. Technical research opportunities exist and the fellow will be encouraged to prepare a paper for publication.

The applicant should be a graduate of a recognized training program and have excellent communication skills. Salary is in the low 30s plus benefits and a generous travel and research allowance.

For questions please contact Alison Luxner at [REDACTED], or alisonluxner@worchesterart.org <mailto:alisonluxner@worchesterart.org> .

Please send a letter of interest, curriculum vitae, and a list of references to:

Director of Human Resources
Worcester Art Museum
55 Salisbury Street
Worcester MA 01609
Equal Opportunity Employer.

Application deadline is Friday July 22, 2005.

THE UNIVERSITY OF NEW MEXICO ART MUSEUM

Museum Conservator

The University of New Mexico Art Museum seeks a conservator for its nationally recognized collections in the history of photography and the graphic arts. These paper collections contain approximately 9,500 photographs, 7,000

historical prints and drawings, and approximately 14,000 lithographs in the Tamarind Institute Archive, and are the focus of ongoing conservation efforts. The museum's conservation lab was created in 2001 and is fully equipped and supplied.

The conservator will work with museum staff on collections care and research; perform conservation/preservation on works on paper, primarily photographs; provide instruction about conservation practices; supervise students and interns; research and write grant applications; participate in long-range planning; and conduct and supervise conservation research.

NATIONAL GALLERY OF ART

Head of Paper Conservation

The National Gallery of Art is seeking applicants to fill the Head of Paper Conservation position. The federal, full-time, permanent position is responsible for managing all aspects of the paper treatment laboratory. This includes supervising all staff, planning and implementing treatments, and devising treatment strategies. The successful candidate should possess a formal advanced degree in paper conservation, have excellent organizational, oral and written communication skills and U.S. citizenship. Candidates will be recruited at both the GS-14 (\$88,369) and GS-15 (\$103,947) salary levels. The position includes benefits. The formal recruitment announcement will provide details for assembly and submission of complete applications. Visit <http://job-search.usajobs.opm.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,
200B South Club Drive,
Landover, MD 20785
or at m-skalka@nga.gov by e-mail.

POSITIONS, INTERNSHIPS, AND FELLOWSHIPS

Do not send application materials to the above address. Applicants must follow instructions provided in the Gallery's formal position announcement provided by the personnel department. EOE.

ASSOCIATE CONSERVATOR

Textiles

The Art Institute of Chicago is seeking a candidate that will be responsible for the care and preservation of all physical textile objects in the museum collection. Assists the curator in the installations of all physical textile objects in the museum collection. Assists the Curator-Conservator, ie Department Head in the installation

of exhibitions, care of the facilities, etc.

Qualifications: Masters in Textile Conservation. Must have 5 to 7+ years experience in textile conservation. Structural Analyses skills required. Strong organizational skills. Prior supervisory experience preferred.

The Art Institute of Chicago
Human Resources Department
MC 634
111 South Michigan Avenue
Chicago, IL 60603
fax (312) 857-0141
aic.jobs@artic.edu

The Art Institute of Chicago is an equal opportunity, equal access employer fully committed to achieving a diverse workforce.

FINE ARTS CONSERVANCY

Senior Conservator

Senior Conservator for Fine Arts Conservancy in West Palm Beach, Florida. Painting restoration/conservation. Examination, technical analysis, written, photographic documentation, and treatment of traditional and contemporary works. Bachelors Degree in Fine Art plus two years' experience in job offered. Fax resume to: [REDACTED] or email to: lab@art-conservation.org.

2005

Directory Updates

Individual

Chang, Angela

Straus Center for Conservation
Harvard University
32 Quincy Street
Cambridge, MA 02138
(617) 496-1903
Fax: (617) 495-0322
angela_chang@harvard.edu
OB, SC

McFarland, Margo

Paper Conservation
The Saint Louis Art Museum
1 Fine Arts Drive
Saint Louis, MO 63110
(314) 655-5263
[REDACTED]

BP

Institutional

Canadian Conservation Institute

Library
1030 Innes Road
Ottawa, ON K1A 0M5
Canada
(613) 998-3721
Fax: (613) 998-4721
cci-icc_services@pch.gc.ca

AIC 34th Annual Meeting

June 16-19, 2006

Providence,
Rhode Island

Westin Providence

\$153 single/double, plus tax

Revised Tentative Schedule
of Activities:

Friday, June 16

Workshops and Tours

Saturday, June 17

General Session, Specialty Group
Sessions, Exhibit Hall, Opening
Reception

Sunday, June 18

General Session, Specialty Group
Sessions, Exhibit Hall, Issues
Session, AIC Business Meeting,
Party²

Monday, June 19

Specialty Group Sessions

Please access our website
(www.aic-faic.org) for additional
information and updates as they occur.

November 2005

Meeting Dates

Washington, DC

• IAG Meeting

Club Quarters meeting room

Friday, November 18th
12:30 – 1:30 p.m., AIC-hosted
lunch with Board members
1:30 – 5:30 p.m., meeting

Saturday, November 19th
8:30 a.m. – 12:30 p.m.

• FAIC Board Meeting

Club Quarters meeting room

Friday, November 18th
8:30 a.m. – 12:30 p.m.

• AIC Board Meeting

Saturday, November 19th
1:30 – 5:30 p.m.

Club Quarters meeting room

Sunday, November 20th
8:30 a.m. – 12:30 p.m.

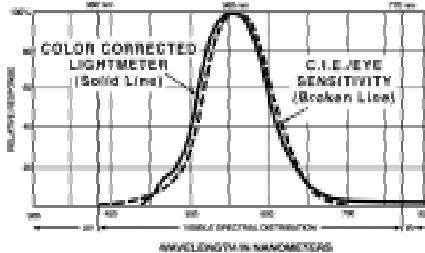
IC Headquarters

LIGHT METERS LIE!

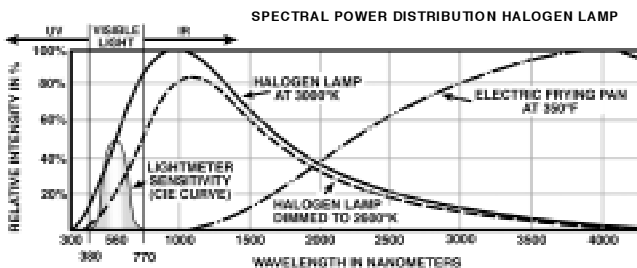


Is your light meter telling you the truth? The short answer is, "Not really." A light meter is superbly designed to provide specific information. In science, getting the right answer depends on asking the right questions. Usually we ask a light meter, "How much energy is hitting this object?" Unfortunately, as good as it is, your light meter was not designed to answer that question. To get the right answer, you need to know some other things.

Your eye can only see certain frequencies of energy. Of the frequencies you can see, you are very sensitive to some and not so sensitive to others. This sensitivity is described by the CIE curve. ["CIE" stands for Commission International de L'Enclairage. Now you know why everyone just says "CIE."] The curve represents the visible spectrum adjusted for the sensitivity of the human eye. The eye only sees about one half of the energy in the visible spectrum (the area under the curve). A light meter is adjusted to this CIE curve to match your eye. It only sees the visible spectrum (and really only about half of that).



Light sources radiate far more than the visible spectrum you see. In fact, only about 5% of the energy from a halogen lamp is in the visible spectrum (and only 20-22% in fluorescent and HID sources). The truth is, an accurate measurement of the real energy hitting your artifacts requires that you know the



characteristics of the source. The light meter isn't trying to lie to you, it just isn't telling you all of the truth. It only sees the small CIE curve under the huge output curve.

Dimming doesn't work as a conservation tool. Look at the dotted line on the graph. Cutting the visible light in half with a dimmer only lowers the total energy by about 10%. And, total energy is what determines damage.

Comparing measured light levels to total energy isn't hard. It just requires some calculation. You have to convert photometric data (data about what you see) into radiometric data (data about total energy). You have to consider the characteristics of the light source.

Halogen lamps are only about 5% visible light. Your meter can't see 95% of the energy hitting your artifact. Put another way, your collection gets bombed with twenty times more energy than your light meter shows.

Fluorescent lamps are 20-22% visible light. So are HID sources. You'll have five times the energy your light meter shows. (You also get five times the UV and really bad color, but that's another article.)

NoUVIR fiber optic lighting is 100% visible light with perfect color, no UV and no IR... NoUVIR®. With NoUVIR, you get exactly the energy you see on your light meter in just the right proportions to match the CIE curve. Light designed to match your eye. What a concept!

The bottom line is ten footcandles of NoUVIR lighting is ten footcandles. Ten footcandles of anything else is five to twenty times that much energy with five to twenty times the damage. No UV, no IR means more light with less damage (or the same light levels with a *whole* lot less damage).

If you're a conservator, you need to know these things. Because, while your light meter might not exactly be lying to you, it certainly isn't telling you everything you need to know! It's a good thing we can!

Call us at [REDACTED] for all the information you might need on fiber optic lighting, case micro-climate controls, books, research materials, or help with your conservation and lighting projects. We're here to help.

NoUVIR RESEARCH

RESEARCH • DESIGN • CONSTRUCTION

- We invented museum quality conservation lighting.
- We defined light and its interactions with matter.
- We discovered Reflected Energy Matching.
- We wrote the books on protecting museum exhibits.
- We work, everyday to save the world... one artifact, one exhibit, one museum, one building at a time.

Call **NoUVIR Research** at (302) 628-9933 for a free catalog and design manual. Learn more at www.nouvir.com.

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