

**PRELIMINARY
PROGRAM**

Archiving 2012

**June 12-15, 2012
Copenhagen, Denmark**

PRELIMINARY PROGRAM



Photo: Suzanne Grinnon

General Co-chairs:

**Mogens Koch, Royal Danish Academy of Fine Arts
Jonas Palm, National Archives of Sweden**

www.imaging.org/ist/conferences/archiving

In cooperation with

**AIC The American Institute for Conservation of Historic & Artistic Works
ALA ALCTS American Library Association-Association for Library Collections
& Technical Services**

**CNI Coalition for Networked Information
IOP/Printing and Graphic Sciences Group**

ISCC Inter-Society Color Council

RPS Royal Photographic Society/Imaging Science Group

**Sponsored by
Society for Imaging Science and Technology**



imaging.org

Conference Overview/Highlights

Copenhagen—a gateway to Scandinavia and the capitol of Denmark—hosts Archiving 2012. This vibrant city has been inhabited since the 8th century AD. A multitude of districts, each representing its own time and distinctive character, makes the city a wonderful place to explore as well as enjoy the many water views, parks, and bicycle paths that line most streets.

The historic atmosphere mixed with a modern city offers attendees a distinctive and interesting setting to learn from peers about effective digital archiving approaches, workflows, processes, and solutions that cultural heritage institutions are facing and addressing.

The conference put together by this year's Program Chairs ensures a technically productive meeting that balances an exciting papers program with fun and interesting networking events.

Highlights include:

- 11 short courses, including four that have never been taught at Archiving (see page 6)
- Welcome Reception at the School of Conservation. (see page 2)
- Two timely keynotes, 43 oral, and 21 interactive technical papers (see page 14)
- A Conference Dinner held at Kulturhuset Islands Brygge with a view of the harbor toward the city center. (see page 2)
- Four fascinating behind-the-scene tours (see page 4)

We hope you will join us for this exciting week and look forward to seeing you in June!

—Mogens S. Koch and Jonas Palm, General Co-chairs

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Conference At-a-Glance

*All technical session will take place at Nationalmuseet (National Museum).
Short Courses take place at the School of Conservation at the Royal Academy of
Fine Arts Schools of Architecture, Design, and Conservation (see page 6).*

Registration Hours

- Tues., June 12, 7:30 – 15:45 @School of Conservation (Tues only)
- Wed., June 13, 7:30 – 15:00 @Nationalmuseet (Wed. - Fri.)
- Thurs., June 14, 7:45 – 14:00 Fri., June 15, 7:45 – 13:00

Tuesday, June 12

- Short Course Program (see p. 6)
- Welcome Reception at the School of Conservation (see p. 2)

Wednesday, June 13

- Keynote by James M. Reilly, Director, Image Permanence Institute
- Conference Exhibit
- Technical Papers Program
 - Building Digital Assets
 - Colour
 - Exhibitor Previews
 - Interactive Papers
- Free evening to explore Copenhagen

Thursday, June 14

- Technical Papers Program
 - Workflow and Metadata Creation
 - 3D Imaging and Standards
 - IQ Testing and Standards

- Behind-the-Scenes Tours (see p. 4)
- Conference Dinner at the Kulturhuset Islands Brygge (see p. 2)

Friday, June 15

- Keynote by John A. Aarons, University Archivist, The University of the West Indies, Jamaica
- Technical Papers Program
 - Collaboration and Costs
 - Novel Capture
 - Compliance
 - Image Processing and JPEG 2000

IS&T thanks
 Royal Danish Academy of
 Fine Arts and
 National Museum of Denmark
 for their support of Archiving 2012.

**We also acknowledge the
 Archiving 2012 Exhibitors:**

HASSELBLAD
 Image Engineering GmbH & Co. KG
 JVC Advanced Media EUROPE GmbH

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Conference Registration back cover

Cover image: The Nyhavn area of Copenhagen is a favorite with tourists. Lined with outdoor dining, there are many hotels nearby.

Copenhagen

Copenhagen, the capitol of Denmark and home to the famous Little Mermaid statue, is a very modern city juxtaposed with its historic past. Recognized as offering one of the best qualities of life, as well as being one of the world's most environmentally friendly cities, Copenhagen is easy to navigate whether on foot, Metro, bus, or bicycle.

The conference venue is well situated to many of the city's cultural offerings including The Royal Library, The National Gallery, the Danish Museum of Art and Design, Rosenborg Castle Gardens (established in the early 17th century), and the world famous Tivoli Gardens and amusement park.

Smörgåsbord (sandwiches; see page 3) and Denmark's famous Carlsberg beer are just two of the culinary highlights the city has to offer.

See www.visitcopenhagen.com/ for more information on the city and planning your visit.

Participate in the Archiving 2012 Exhibition

An exhibition featuring digital archiving related products and services will run all day Wednesday in the same space as the coffee break and Interactive Papers Session.

For details, contact Donna Smith
dsmith@imaging.org
 +1-703-642-9090 x107

Conference Venues

School of Conservation (Konservatorskolen)

Tue. June 12 various times (see page 6)
 Short Courses
 Tue. June 12, 17:30 – 19:00
 Welcome Reception

Located at Esplanaden 34, past the Amalie Palace and near the Kastellet. The School is a lovely ~20-minute walk from Nyhavn; ~30 minutes from the Nationalmuseet. The nearest train station is Østerport, which is a 10 minute walk. Buses 1A, 15, and 19 stop on Esplanaden.

National Museum of Denmark (Nationalmuseet)

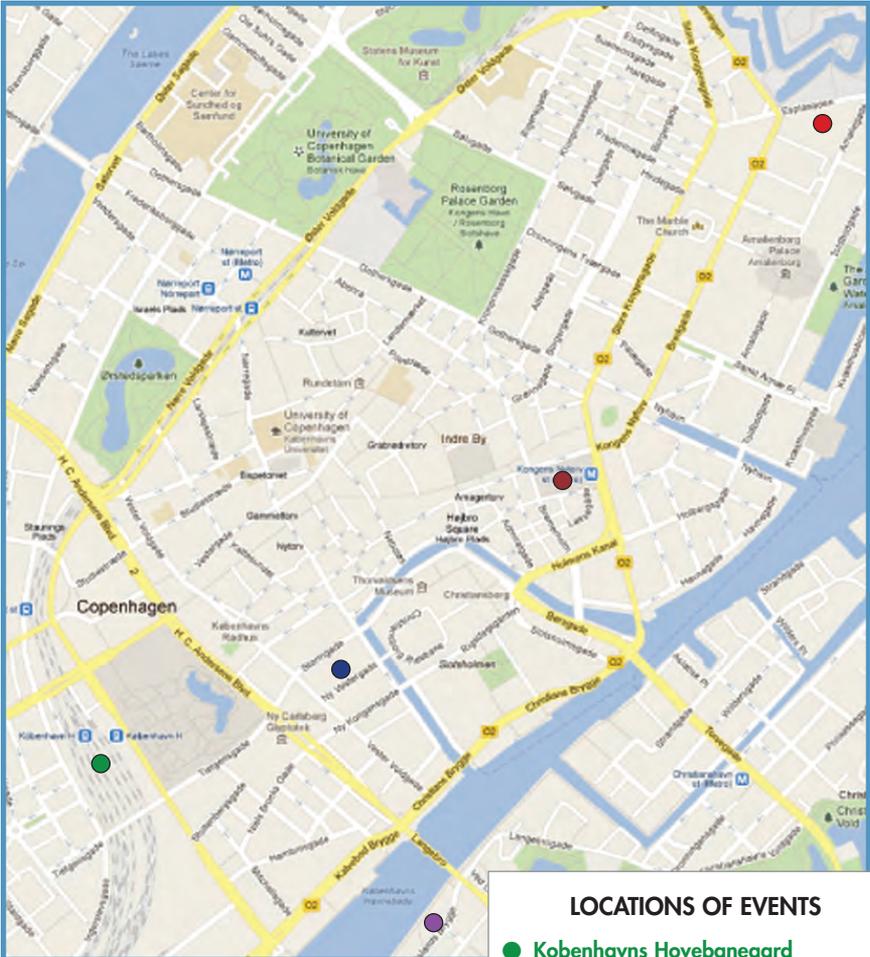
Wed. June 13 to Fri. June 15
 Technical Sessions (see page 14)

Located at Frederiksholms Kanal 12. Buses 1A, 2A, 5A, 11A, 12, 15, 26, 29, 33, 650s, 901, and 902 stop nearby. Nearest train station is Central; nearest Metro station is Norreport.

Kulturhuset Islands Brygge

Thursday, June 14
 Conference Reception
 19:00-21:30

Located across the river from downtown Copenhagen, Kulturhuset Islands Brygge (<http://kubik.kk.dk/k-i-b>) enjoys waterfront views. Take bus 250s to Isafjordsgade, a 3 minute walk from the reception site.



LOCATIONS OF EVENTS

- **Kobenhavns Hovebanegard (Central train station)**
- **Kongens Nytorv (Metro station; direct service from airport)**
- **Nationalmuseet / National Museum of Denmark (technical sessions)**
- **Konservatorskolen / School of Conservation (short courses and welcome reception)**
- **Kulturhuset Islands Brygge (conf. banquet)**



Photo: Suzanne Grinnon

Outdoor dining abounds in Copenhagen in the Summer, and the smörgåsbord’s—which run the gamut from steak tartar to the herring salad seen here—are delicious.

Behind-the-Scenes Cultural Institution Tours

Thursday, June 14, 2012

Take advantage of one of these unique Behind-the-Scenes Tours offered by the Archiving Conference. See box on page 5 for details.

The Royal Library, Department of Maps, Prints and Photographs

The Royal Library is Denmark's national library and the library for the University of Copenhagen. The tour takes place in the striking Black Diamond building and it focuses on how the library curates its national photographic collections.

Using the current project "Europeana 1914-1918" about the dissemination of source materials related to the First World War, staff illustrate the library's overall policy and strategy for collection management and describe how the digital, as well as the analog lifecycle, is managed in practice. This includes: ingest and qualification of the collections; digitization and preservation; and research and dissemination. Participants hear about challenges and see examples from the library's rich photographic collections. The visit includes a brief tour of the digitization lab.

For more information visit
www.kb.dk/en/nb/samling/bs/index.html

Danish National Archives

The Danish National Archives collects and stores archival records from central government authorities, military forces, the Danish Royal House, and private organizations and individuals. The collections date back to the 12th century. Today there is about 250 kilometres of shelving. The tour visits the Archive's new storage facilities (not the historic main building), which has a capacity of ~380 km of shelving. Uniform barcoded boxes, trucks, and 12-meter high shelving create a modern facility that is expected to hold al-

most all future accession of paper records created by the Danish government.

The tour also includes an introduction to the digital archiving work of the Danish National Archives, which has a collection of ~30 TB of born-digital data, with the amount growing. We visit the facilities for the reception, testing, and preservation of digital records, and discuss practical solutions for keeping them.

For more information visit
http://www.sa.dk/content/us/about_us/danish_national_archives

Hasselblad

Established in 1841 in Gothenburg, Sweden, Hasselblad is one of the best known makers of medium format cameras. Their most famous use was during the Apollo program missions when man first landed on the Moon. Almost all of the still photographs taken during these missions used modified Hasselblads.

After a welcome and brief history of Hasselblad, participants will tour the facility and meet world famous photo-grapher Jorgen Angel, who will speak on the history of analog to digital photography. Angel is best known for his analog images of rock stars. Hasselblad staff also will be available for questions.

For more information visit
<http://www.hasselbladusa.com/>
<http://www.angel.dk>

Behind the Scenes with Phase One

Take advantage of this unique opportunity to visit Phase One headquarters, a leading manufacturer in high-end medium format digital photography. Sponsored by the Digital Transitions Division of Cultural Heritage in New York City, attendees will tour the Phase One facility including R&D, testing, and assembly. Also hear from Phase

Accommodations and Transportation

Accommodations

There is no headquarter hotel for this meeting, however we have been able to secure some special rates at hotels near the confernece venues. We have posted this information on the conference web page, with information on and links to the properties. You may also want to explore various online booking sites like hotels.com to locate other accommodation options and the best rates.

*Please note that Denmark does not use the Euro, but the Kroner (DKK). At the time of printing, the **exchange rate was approximately** €1 ~ 7.5 DKK; \$1 ~ 5.5 DKK*

To/From Copenhagen

There are non-stop flights to Copenhagen International Airport (CPH) from many cities including Amsterdam, Barcelona, Chicago, Frankfurt, Madrid, New York, Paris, Washington, and Zurich. CPH is 8 km south of the city. For more information visit www.cph.dk/CPH/UK/MAIN.

To/From the Airport

- From the airport, a taxa (taxi) to central Copenhagen will cost approximately DKK220.
- Depending on your hotel location, the Metro is an easy travel option. The Metro station is located up an escalator at the end of Terminal 3. It operates at 4-6 minute intervals during most hours, and at 15-20 minute intervals at night. Travel time from CPH to Nørreport Metro Station (in central Copenhagen) is 15 minutes. For more information visit <http://intl.m.dk/>.
- There is train service from CPH to Copenhagen Central Station every 20 minutes; the journey takes 30 minutes. A one-way ticket (3 zones) costs DKK34.50. For more information visit www.cph.dk/CPH/UK/MAIN/Parking+and+Transport/By+Train/
- The link for information on bus service is www.cph.dk/CPH/UK/MAIN/Parking+and+Transport/By+Bus.htm

One CEO, VP of R&D, and VP of Innovation & Application speak about the technology behind Phase products and how they work in various vertical markets including the cultural heritage community.

For more information visit www.phaseone.com and www.digitaltransitions.com

Special Note on Tours

Advance registration is required; space is limited and reserved on a first-come first-served basis. Tour time is ~1.5-2 hours. Tours will end in time for participants to get to the Conference Reception.

Everyone who registers by the early registration deadline will receive more details on the tours, including directions on how to sign up for them immediately following that date. Others will receive details as they register. All tours are free, but participants are responsible for getting to the tour site on time. Transportation and other details will be provided on the tour registration form. Those who do not wish to take a tour will have a free afternoon.

Short Course Program: Tuesday, June 12, 2012

T1A: Digital Forensics for Acquisitions on Physical Media: Concepts and Methods

Tuesday, June 12, 2012

8:00 – 17:30 (8 hours)

Instructor: Christopher (Cal) Lee,
University of North Carolina, Chapel Hill

Information professionals are often responsible for acquiring or helping others to access materials that reside on removal storage media, e.g. receiving disks as part of a collection. The information is often not packaged and described as one would hope; the information professional must extract whatever useful information resides on the medium, while avoiding the accidental alteration of data or metadata. The field of digital forensics offers many methods for data recovery and documentation. This course explores the layers of hardware and software that allow bitstreams on digital media to be read as files. Participants learn the roles and relationships of these layers and learn about tools and techniques for ensuring the completeness and evidential value of data.

Benefits

This course enables the attendee to:

- Understand the roles and relationships between the main layers of technology required to read a string of bits off a physical storage medium and treat it as a file.
- Learn about various forms of data that may be “hidden” on the physical storage medium.
- Recognize the “order of volatility” of data in computer systems and strategies for accidental manipulation of volatile data.
- Delve into the data that a file system uses to manage files, focusing on FAT32 as a common example.
- Gain an awareness of digital forensics tools and techniques and learn where to find more information about those tools and techniques.

- Learn well-established practices for documenting the forensic process, in order to ensure the evidential value of data.

Intended Audience: information professionals responsible for acquiring or transferring collections of digital materials, particularly those received on removable media.

Christopher (Cal) Lee is associate professor at the School of Information and Library Science at the University of North Carolina, Chapel Hill. He teaches graduate and continuing education courses in archival administration, records management, digital curation, and information technology for managing digital collections. His research focuses on curation of digital collections and stewardship of personal digital archives. Cal is PI for the BitCurator project and editor of I, Digital: Personal Collections in the Digital Era.

T2A: Evaluating and Selecting Still Image File Formats and Compression for Digitization Projects

8:00 – 12:15 (4 hours)

Instructor: Steven Puglia, US Library of Congress

Decisions on image file formats and compression should reflect current perspectives, and will influence significantly an institution’s ability to produce, manage, preserve, and provide digital resources. The issues to be considered are not just technical, economic and fiscal implications need to be considered as well. This course covers criteria, guidelines, and methods for evaluating and selecting appropriate file formats and image compression (lossless and lossy) for raster image files to be produced by digitization projects for a wide variety of collection content, including books, manuscripts, still photographs, maps, etc. Methods used for analyzing the effects of compression on image files and for determining appropriate and acceptable levels of compression for different collections and projects will be covered.

Short Courses At-a-Glance

Descriptions for short courses begin on page 6.

8:00 – 17:30

T1A: Digital Forensics for Acquisitions on Physical Media: Concepts and Methods

8:00 – 12:15

T2A: Evaluating and Selecting Still Image File Formats and Compression for Digitization Projects

13:15 – 17:30

T2C: JPEG 2000 and JP2 for Image Preservation and Access

8:00 – 12:15

T3A: Scanner & Camera Imaging Performance: Benchmarking and Workflow Monitoring

13:15 – 17:30

T3C: Understanding Your Camera / Scanner and its Color Reproduction

8:00 – 12:15

T4A: Lessons Learned in Preservation Planning

13:15 – 17:30

T4C: The Identification and Preservation of Digital Prints

8:00 – 10:00

T5A: Intro. to Color for Libraries, Archives . . .

10:15 – 12:15

T5B: Digital Preservation of Audiovisual Content

13:15 – 15:15

T5C: From Ingest to Access Using Archivematica

15:30 – 17:30

T5D: Metamorfoze Preservation . . .

Benefits

This course enables the attendee to:

- Learn about criteria and guidelines for selecting image file formats and compression, including sustainability factors and related confidence, costs, implementation, considerations, technical capabilities, verification and validation, and metadata support.
- Understand methods of evaluating image compression, including visual or subjective assessment, metric or objective analyses, and task accuracy evaluations.
- Appreciate context for ensuring decisions support key institutional considerations in the areas of cost-effectiveness, digital storage, IT infrastructure, and digital preservation.

Intended Audience: managers, librarians, imaging practitioners, and anyone involved with planning, implementing, and managing digitization in cultural heritage organizations. Only general experience with digitization is recommended.

Steven Puglia is a digital conversion services manager in the Office of Strategic Initiatives at the US Library of Congress. He provides technical expertise for a wide range of projects involving the digital conversion of collections. In April 2011, Puglia began coordinating the Still Image Working Group of the Federal Agencies Digitization Guidelines Initiative. Previously, from 1988-2011, he worked as a preservation and imaging specialist at the US National Archives & Records Administration.

T3A: Scanner & Camera Imaging Performance: Benchmarking and Workflow Monitoring

8:00 – 12:15 (4 hours)

Instructors: Peter Burns, Burns Digital Imaging, and Don Williams, Image Science Associates

The course begins with a discussion of how to interpret customer requirements when selecting components for an image acquisition system. Several imaging principles that provide a background to understanding imaging performance in digital acquisition and conversion are then introduced. The use and adaptation of several standards and emerging

institutional guidelines in museum or library environments are described. These include the Federal Agency Digitization Guideline Initiative (FADGI) and Metamorfoze.

Several common problems faced by those providing imaging services, or seeking to improve image content, are included. In each of the cases addressed, the discussion focuses on the selection and development of test plans, performance measurements, use-case acceptance criteria, and characteristics for tests targets and software. Suggestions and tools for corrective action for poor performance are provided.

Benefits

This course enables the attendee to:

- Establish accountability for imaging performance problems.
- Describe several standards to characterize scanner and camera performance.
- Evaluate manufacturers' claims of resolution, dynamic range, and noise.
- Identify sources of performance variation in digital image conversion.
- Understand user requirements for analysis software tools.
- Apply summary measures to monitor imaging performance.
- Develop test plans, and apply corrective-action solutions to ill-behaved performance.
- Identify key questions to ask imaging professionals and service providers.

Intended Audience: managers, engineers, technicians, manufacturers, service providers, and content custodians interested in evaluating and monitoring scanner and camera performance, and emerging guidelines. A working knowledge of digital scanner and camera operation and the common technologies is assumed.

Peter Burns is a consultant working in digital image evaluation, system monitoring, and image processing. He has experience in several areas of imaging for document, medical, remote sensing, and digital

photographic applications. He has taught imaging courses for many years, as an adjunct faculty member at Rochester Institute of Technology, at Kodak, and previous Archiving conferences.

Don Williams is founder of Image Science Associates, a digital imaging consulting and software group. Their work focuses on quantitative performance metrics for digital capture imaging devices, and imaging fidelity issues for the cultural heritage community. He has taught short courses for many years, contributes to several imaging standards activities, and is a member of the Advisory Board for the interagency US Federal Agencies Digitization Guidelines Initiative, FADGI.

T4A: Lessons Learned in Preservation Planning

8:00 – 12:15 (4 hours)

Instructor: Christoph Becker, Vienna University of Technology and Secure Business Austria

Decisions in digital preservation pose the delicate mission of balancing desired goals of authentic long-term access with the technical means available to date. The creation of a concrete plan for preserving an institution's collection of digital objects requires the evaluation and assessment of possible candidate actions against clearly defined and measurable goals and criteria.

The planning tool Plato implements a trustworthy preservation planning method that combines a structured decision workflow with controlled experimentation and automated measurements to achieve evidence-based trustworthy decisions. This course provides an introduction to Plato, reports on its real-world applications, and discusses a series of lessons learned that can support organizations on their path to successful preservation planning.

Benefits

This course enables the attendee to:

- Acquire an understanding of the decision space in operational preservation planning.
- Identify the key decision factors to be considered in preservation decisions.

- Apply the planning method and tool in their organization.
- Analyze the strengths and weaknesses of alternative actions in the context of scenarios.
- Formulate specific, actionable preservation plans.
- Justify the reasoning for taking specific actions in operational preservation.

Intended Audience: In many organizations, there is an identified need for the control of preservation operations, but not a defined role or an assigned person. The target audience of this course is decision makers with the operational responsibility for ensuring the long-term accessibility, understandability, and authenticity of content. The course will not cover planning on a strategic policy-setting level, but on the operational level of content preservation, analyzing which specific actions are optimal for specific reasons.

Christoph Becker is senior researcher at the Vienna University of Technology and at Secure Business Austria. He is the architect of the preservation planning tool Plato and currently leading the sub-project Scalable Planning and Watch of the new FP7-funded project SCAPE, which is set to move forward the control of digital preservation operations from ad-hoc decision making to proactive, continuous preservation management. This is facilitated through a context-aware planning and monitoring cycle integrated with operational systems.

T5A: Introduction to Color for Libraries, Archives, and Museums

8:00 – 10:00 (2 hours)

Instructor: Robert Buckley,
University of Rochester / NewMarket Imaging

This course is intended to introduce attendees to the topics in color science and technology needed to understand and become familiar with the use of color in capturing, storing and reproducing archival masters. Along the way, attendees hear about color targets, raw files, ICC profiles, digitization guidelines, lighting, color spaces and encodings, input

and output referred image states, archival file formats, technical metadata, color accuracy, and color management. All of this is woven into a single coherent story that follows a color original from input through output. The course also serves as a lead-in to T3C: Understanding Your Camera / Scanner and its Color Reproduction.

Benefits

This course enables the attendee to:

- Appreciate how CIE colorimetry, color encodings, and ICC color management are used in archival color imaging.
- Sort out the different color encodings, including input-referred, output-referred, and raw, and which to apply where in the workflow.
- Understand color specifications in image capture guidelines such as FADGI and Metamorfoze, and file formats such as TIFF, JP2, and PDF/A.
- Learn how color targets are used and why custom targets are useful.

Intended Audience: those in the library, archives, and museum community interested in a better understanding of the color science and engineering underlying workflows and implications for what they do now and in the future.

Robert Buckley is a senior scientist in the department of electrical and computer engineering at the University of Rochester and the founder of NewMarket Imaging, which works with clients on the capture, preservation, and interchange of digital color images. He chairs the CIE Committee on Archival Color Imaging and is on the advisory board of the US Federal Agencies Digitization Guidelines Initiative. He was a member of the JPEG committee, an editor of the JPEG 2000 standard, and has worked extensively on the application of JPEG 2000 in the cultural heritage community. He is an IS&T Fellow and founding co-chair of the Archiving Conference.

5B: Digital Preservation of Audiovisual Content

10:15 – 12:15 (2 hours)

Instructors: Richard Wright and Marius Snyders,
PrestoCentre

This course looks at audio and video files and some of the organizational aspects of their long-term digital preservation and access. It covers what audio and video files are technically, including the aspects of coding, compression, and wrapper formats; how the content within the files can be preserved; and why it is necessary to talk about content and quality, rather than simply “preserving the bits.” The course also describes standards used for audiovisual content and prospects for rationalization of the range of existing standards, and rights management and content tracking.

The course further explores how to build a trusted preservation system for audiovisual content, including managing storage and coping with outsourced services; preservation and metadata; access; and the four requirements of time-based content: granularity, navigation, citation, and annotation. It discusses calculating the cost of long-term digital preservation: evaluation of the different models and tools available to audiovisual archives.

Benefits

This course enables the attendee to:

- Understand the complexities of audiovisual (AV) content.
- Learn its “signal preservation” requirements.
- Understand the specific access requirements of time-domain materials.
- Get an overview of projects providing large-scale audiovisual preservation and access (projects from around the world will be included, but with an emphasis on Europe).
- Know the standards and best-practice methods for AV preservation and access.
- Appreciate the applicability of the models for cost estimation, as well as ways archives could share costs data and experiences to improve processes.
- Gain an appreciation of the potential role

for broadcast and other AV content, based on recent developments in technology and rights, with forecasts for the future.

Intended Audience: anyone responsible for collections that include AV materials, or anyone interested in their digital preservation and access issues. Anyone with responsibility for digital libraries or trusted digital repositories, and an interest in how that technology supports AV content.

Marius Snyders is manager of PrestoCentre (www.prestocentre.eu), which serves an international community of stakeholders in AV digitization and digital preservation through online and offline services, advocacy, publications, training, and collaboration. For the European Commission’s Information Society Directorate General, Snyders has managed the creation of the European service that provides online access to more than 1.5 million cultural heritage objects (www.europeana.eu). He has a background in political science, geography, and GIS.

Richard Wright worked on AV preservation for the BBC from 1994 to 2011. He headed the EC project Presto (2000-2002), which developed the idea of efficient digitization using “preservation factory,” and which led to the PrestoSpace and Presto-PRIME projects, culminating in the launch in 2011 of the PrestoCentre, a non-profit membership organization supporting AV archives in their access and preservation activities. His background is acoustics, speech, and signal processing research. He holds a PhD from Southampton University.

T2C: JPEG 2000 and JP2 for Image Preservation and Access

13:15 – 17:30 (4 hours)

Instructor: Robert Buckley, University of Rochester /
NewMarket Imaging

This course is intended to give attendees a firm grounding and practical knowledge in the use and applicability of JPEG 2000 and the associated JP2 file format. After a brief introduction to JPEG 2000 and its history, the course demonstrates JPEG 2000 and describes how it works at a level that will en-

able attendees to understand the features that can benefit them and the factors that most affect its performance. After illustrating the performance of JPEG 2000 for both lossless and lossy compression, the course discusses the JP2 file format, the base file format defined in the JPEG 2000 standard. A number of applications that use JPEG 2000 are discussed before concluding with selected case studies of the use of JPEG 2000 by cultural heritage institutions.

Benefits

This course enables the attendee to:

- List the benefits and features of JPEG 2000.
- Understand how to relate JPEG 2000 features and options to their requirements.
- Understand the capabilities of the JP2 file format.
- Explain how JPEG 2000 works and what parameters most affect its performance.
- Understand why and how applications are using JPEG 2000.

Intended Audience: those in the library, archives, and museum community who are evaluating JPEG 2000 for future applications or who are already using it and want to make the best use of it in current applications.

Biography: see T5A

T3C: Understanding Your Camera / Scanner and its Color Reproduction

13:15 – 17:30 (4 hours)

Instructor: Dietmar Wueller,

Image Engineering GmbH & Co. KG

The first half of this course describes the image processing in a camera / scanner, the so-called image pipe, and how a camera gets from light to the output image. This section addresses typical aspects of camera problems that occur during capture like chromatic aberrations, correct exposure (sensitivity,

f-number, exposure time, diffraction limitations, noise, focus etc.), shading, and white balancing. Strategies for solutions are shown via practical demonstrations.

The second half of the course addresses color reproduction and its impact on image quality monitoring. Through practical demonstrations, the course looks into the reasons why different types of originals lead to different quality levels in terms of color reproduction. The ways in which device manufacturers solve these problems is explained and practical, real-world solutions for customers who do not have access to raw processing nor the technical skills required to make necessary changes, are explored.

Benefits

This course enables the attendee to:

- Understand the basic process of image processing in cameras.
- Identify image quality issues that may occur during the capture process.
- Solve many image capture problems based on the acquired knowledge.
- Apply these solutions to individual workflows.
- Define system specifications based on given examples.
- Understand the origin of color reproduction issues.
- Select appropriate steps to solve these problems.

Intended Audience: photographers, engineers, and technicians who work in archiving or organize and control archiving workflows. This includes manufacturers, service providers, and content custodians. A working knowledge of digital scanner and camera operation, and the common technologies will be assumed.

Dietmar Wueller studied photographic sciences at the University of Applied Sciences Cologne (Germany). Since 1997, he has run an independent test lab for digital cameras and scanners, which has developed into one of the leading suppliers of test

equipment for digital image capture devices. Wueller became the German representative for ISO TC42 WG18 in the summer of 2000, and is a member of the board of the European Color Initiative. He is author and coauthor of two books and has taught several courses on image processing at the University of Cologne and at the IS&T/SPIE Electronic Imaging Symposium.

T4C: The Identification and Preservation of Digital Prints

13:15 – 17:30 (4 hours)

Instructors: Ryan Boatright, Atelier Boba, and Franziska Frey, Harvard Library and RIT

Through presentations and print viewings, participants learn about the processes and unique aesthetics of many types of digital prints used in the arts. Print identification techniques are taught through examination of didactic sample sets and the use of Graphics Atlas, a print characterization website developed by the Image Permanence Institute in Rochester, NY. Participants receive practical advice on handling, storage enclosures, and proper display and storage conditions. They are introduced to a range of conservation materials, enclosure designs, and tools for managing the storage environment.

Benefits

This course enables the attendee to:

- Define the most common digital print types.
- Describe the basic component materials of digital prints.
- Differentiate between photographic and digital prints.
- Understand the aesthetic nuances that exist within inkjet prints.
- Understand a methodology for digital print identification.
- Identify thermographic, electrophotographic, inkjet, and digitally exposed photographic prints.
- Understand the roll of the environment in the deterioration of digital prints.
- Know proper storage conditions and

materials and how to safely handle digital prints.

Intended Audience: museum and archive professional, and photograph conservators.

Ryan Boatright is a contemporary artist/photographer who was a research scientist at the Image Permanence Institute (IPI) from 2005 to 2009 where he created www.graphicsatlas.org, a web resource that brings sophisticated print identification tools to conservators, archivists, curators and educators. In 2009, Boatright co-founded Atelier Boba, a photograph conservation lab and digital printing studio in Paris.

Franziska Frey is the Malloy Rabinowitz Preservation Librarian and head of Preservation and Digital Imaging Services at Harvard Library. She is also an affiliate professor at the Center for Imaging Science at Rochester Institute of Technology (RIT). Frey previously served as Interim Chair and McGhee Distinguished Professor at RIT's School of Print Media. She received her PhD in natural sciences (concentration: imaging science) from the Swiss Federal Institute of Technology in Zurich, Switzerland. Before joining the faculty of the School of Print Media, she worked as a research scientist at IPI. Her work has primarily focused on establishing guidelines for viewing, capturing, quality control of, and archiving digital images. She publishes, consults, and teaches worldwide on various issues related to establishing digital image databases and digital libraries. She is also involved in several international standards groups.

T5C: From Ingest to Access Using Archivematica

13:15 – 15:15 (2 hours)

Instructor: Courtney Mumma, Archivematica

This course uses the free and open-source Archivematica tool to demonstrate and discuss a practical implementation of the ISO-OAIS functional model that is adaptable across a wide range of archival and library institutions. The course begins with a first-person account of media transfer based being the digital archivist responsible for the Vancouver Olympics Organizing Committee's electronic records transfer to the City of Vancouver Archives. The system developed

there is the basis of the open-source Archivematica software.

Archivematica is used to demonstrate Submission Information Package (SIP) creation, ingest, preservation planning, archival storage, (meta) data administration, and access for web-based users via ICA-AtOM. Other topics of discussion are ISO-TRAC, preservation strategies, and metadata standards (METS, PREMIS, Dublin Core, ISAD, EAD, etc). Recommended reading: www.oclc.org/research/publications/archive/2000/lavoie/ and <http://archivematica.org>

Benefits

This course enables the attendee to:

- Gain a better understanding of the practical steps and processes involved in standards-based digital preservation.
- Familiarize themselves with the free and open-source Archivematica system to determine whether it provides a solution for their requirements.

Intended Audience: librarians, archivists, and ICT professionals responsible for managing digital collections and establishing long-term digital curation and access strategies.

Courtney Mumma holds a masters degree in both archival studies and library and information studies from the University of British Columbia. As digital archivist at the City of Vancouver Archives, she managed the acquisition of born-digital records (records created in a digital format), including the records of the Vancouver 2010 Winter Games. In the course of that work, she completed a requirements analysis for a digital archives system that resulted in a partnership with Artefactual Systems to migrate to and develop Archivematica and ICA-AtOM at the City Archives. Mumma is currently working as Archivematica community manager. She has contributed research to the InterPARES project, the UBC Digital Forensics project, and currently the Mellon-funded BitCurator project.

T5D: Metamorfoze Preservation Imaging Guidelines and its Daily Use

15:30 – 17:30 (2 hours)

Instructor: Hans van Dormolen,
National Library of the Netherlands

In this course the basic principles of the Metamorfoze Preservation Imaging Guidelines, the technical criteria, and the use of technical targets are discussed from a theoretical point of view. Different technical issues are addressed, such as how to set up a camera system according to the Metamorfoze Preservation Imaging Guidelines and how to maintain this setting over a long period of time. Discussions of technical targets, including Digital ColorChecker SG, UTT, SRC, and their specific use, correlation, and hierarchy, as well as the technical criteria and tolerance levels and their specific meaning, correlation, and hierarchy is included. Finally, how to work with UTT on a daily basis, deal with metamarisme, and interpret and deal with technical scanner and camera problems are discussed.

Benefits

This course enables the attendee to:

- Understand the basic principles and technical criteria of the Metamorfoze Preservation Imaging Guidelines.
- Understand the different uses of technical targets.

Intended Audience: anyone who wants to learn more about the Metamorfoze Preservation Imaging Guidelines and its daily workflow. Technical photographic knowledge is recommended.

Hans van Dormolen is a photographer working as a researcher and imaging specialist at the National Library of the Netherlands. He is the author of the Metamorfoze Preservation Imaging Guidelines and author and co-author of several other Metamorfoze guidelines. He is a member of ISO TC 42 WG 26, CIE Archival Color TC8 and IS&T.

Technical Program

Wednesday June 13, 2012

8:15 - 9:15

KEYNOTE SESSION WEDNESDAY

Session Chair: Mogens Koch,
Royal Danish Academy of Fine Arts (Denmark)

Standards and Testing for Traditional and Modern Image Media, James M. Reilly,
Rochester Institute of Technology (USA)

9:20 - 10:20

BUILDING DIGITAL ASSETS 1

Session Chair: Ulla Kejser,
Royal Library of Denmark (Denmark)

Flexible Bit Preservation on a National Basis, Bolette A. Jurik, *The State and University Library of Denmark*; Jun P. Yoneyama, *The National Archives of Denmark*; and Eld M.O. Zierau, *The Royal Library of Denmark (Denmark)*
Lessons Learned from NARA's Electronic Records Archives Project, Megan E. Phillips,
US National Archives and Records Administration (USA)

Measuring the Impact of Preserving Digital Assets, Kathleen Murray and Dreanna Belden,
University of North Texas (USA)

11:00 - 11:20

INTERACTIVE PAPER PREVIEWS 1

Session Chair: Stanley Smith,
J. Paul Getty Museum (USA)

Language Research on Image Quality Assurance based on Objective Factors, Hyung Ju Park and Dong Hwan Har,
Chung-Ang University (S. Korea)
Research on Another Permanent Data Storage Solution, Barry M. Lunt, Matthew R. Linford, and Robert Davis, *Brigham Young University (USA)*

FamilySearch Indexing: Providing Easy Access to Your Records, Scott Flinders,
FamilySearch (USA)

A Survey of Preservation of Digital

Resources in the National Libraries with the Membership of the International Internet Preservation Consortium (IIPC), Mitra Samiee,
National Library and Documents Organization of the Islamic Republic of Iran (Iran)

Characteristics of Motion Picture Films as Aids to Identification in the Age of Digitization, Erik Piil, *Anthology Film Archives (USA)*

Rationalizing the Concept of UX in Digital Preservation, Anssi Jääskeläinen, Mikkelä
University of Applied Sciences (Finland)

Modelling of Moire Formation in Scanned Halftone Images, Przemysław Skurowski,
Silesian University of Technology (Poland)

Towards the New Paradigm based Image Quality Assessment Method: Evaluation of Phase Correlation Models, Przemysław Skurowski,
Silesian University of Technology (Poland)

The Use of Information Technology in Accessing Archival Documents in Tertiary Institutions in Uganda: Challenges and Opportunities, Christine Byaruhanga,
Christian University (Uganda)

Developing Tools and Methods for Sharepoint to Archive Process, Osmo Palonen, Mikkelä
University of Applied Sciences; Juha Anttila, *iITC Oy*; and Valteri Koivunen,
Innofactor Plc (Finland)

11:20 - 12:20

BUILDING DIGITAL ASSETS 2

Session Chair: Stanley Smith,
J. Paul Getty Museum (USA)

Closing the Digital Curation Gap: A Grounded Framework for Providing Guidance and Education in Digital Curation, Helen R. Tibbo,
University of North Carolina at Chapel Hill (USA)

Practical Digital Preservation Using Archivematica, Courtney Mumma and Peter Van Garderen,
Artefactual Systems Inc. (Canada)

The Difficulties of Archiving, Preserving and Re-Exhibiting Vintage Video Artworks, Adam Lockhart,
University of Dundee (UK)

12:20 - 12:40

EXHIBITOR PREVIEWS

Session Chair: Stanley Smith,
J. Paul Getty Museum (USA)

14:00 - 14:40

BUILDING DIGITAL ASSETS 3

Session Chair: Steve Puglia,
US Library of Congress (USA)

The ARCHIVATOR: A Solution for Long-Term Archiving of Digital Information, Oscar Plata^{1,2} and Rune Bjerkestrand³; ¹University of Malaga (Spain), ²Tedial (Spain), and ³Cinevation (Norway)

The CineSave Project: Long-Term Preservation of Digital Productions, Christoph Voges, consultant, and Jan Fröhlich, CinePostproduction GmbH (Germany)

14:40 - 15:00

INTERACTIVE PAPER PREVIEWS 2

Session Chair: Steve Puglia,
US Library of Congress (USA)

Error Resilient Lossless Coding based on Binary RLE, Charle Guyon and Bernard Besserer, University of La Rochelle (France)
“PlalR”: A System to Provide Full Access to Digitized Newspaper Archives, Thomas Palfrey, Stephane Nicolas, and Thierry Paquet, University of Rouen (France)

A New Beginning: The Electronic Records and Digitization Program of the Directorate of History and Heritage Archives, Warren Sinclair, Directorate of History and Heritage (Canada)

Lessons Learned in Archiving: A DIY Perspective, Caleb Sayan, Blue Rider Design and Visual Archiving Solutions (USA)

Classifying the End-of-Term Web Archive, retroReveal.org: Semi-Automated Open-Source Algorithms and Crowdsourcing Tools for Discovery, Characterization & Recovery of Lost or Obscured Content, Harold M. Erickson, University of Utah Health Sciences

Center, and Joyce L. Ogburn, Marriott Library, University of Utah (USA)

Application of Interpretation Standards in Complex Data Models, Mark Ward, FamilySearch.org (USA)

The DNG Dilemma: Establishing a Consistent User Interface for Objective Imaging Practices, William Scott Geffert, imagingetc (USA)

Archiving Solution with Optical Disk, Hiroki Okamatsu, Takao Akaishi, Kazuo Adachi, and Takaya Matsumoto, Victor Advanced Media Co., Ltd. (Japan)

Application of Optical Disc for Archiving, Takao Ihashi, CDs21 Solutions (Japan)

Archiving of Personal Digital Photograph Collections with a MPEG-7 based Social Networks Check-In Information Annotation Methodology, Po-Yen Chen, Wei-Chen Su, and Pei-Jeng Kuo, National Chengchi University (Taiwan)

15:00 - 17:00

INTERACTIVE PAPER SESSION

17:00 - 18:00

COLOUR

Session Chair: Dietmar Wueller,
Image Engineering GmbH & Co. KG (Germany)

Analysis of Color Management Default Camera Profiles for Museum Imaging Applications, Roy S. Berns, Rochester Institute of Technology, and Stanley Smith, J. Paul Getty Museum (USA)

Recovering Spectral Reflectances of Artistic Paintings Through the Use of Image Data and Evaluating Their Accuracies,

Noriyuki Shimano and Takayuki Nishino, Kinki University (Japan)

CIE Recommendations on Color Capture and Encoding for Digital Preservation, Robert Buckley, University of Rochester / NewMarket Imaging; Steven Puglia, Library of Congress; and Michael Stelmach, consultant (USA)

18:00+

Free evening to enjoy Copenhagen

Thursday June 14, 2012

8:15 - 10:30

WORKFLOW AND METADATA CREATION

Session Chair: Kathleen Murray,
University of North Texas (USA)

Experiences from Digidaily, Inter-Agency Mass Digitization of Newspapers in Sweden, Heidi Rosen, Torsten Johansson, and Henrik Johansson, Kungliga Biblioteket; and Mikael Andersson, Riksarkivet/MKC (Sweden)
Scaling Digital Preservation: Ancestry.com's Approach to Rapidly Digitizing Diverse Content, Joshua B. Harman, Ancestry.com Inc. (USA)

Prediction of Selection Decision of Document Using Bibliographic Data at the National Library of France (BnF), Ahmed Ben Salah,^{1,2} Geneviève Cron,¹ Thierry Paquet,² and Nicolas Ragot³; ¹Bibliothèque Nationale de France, ²Université de Rouen, and ³Université François Rabelais Tours (France)

Towards a Archive Place for Accessing Digital Records, Quyen L. Nguyen, NARA (USA)
Acquisition and Processing of Disk Images to Further Archival Goals, Christopher A. Lee and Kam Woods, University of North Carolina at Chapel Hill (USA)

The Management of Digital Images at the National Library and Archives Iran with the Use of the Open Archival Information System (OAIS) Reference Model, Mitra Samiee, National Library and Archives of the Islamic Republic of Iran; Saeed Rezaei Sharifabadi and Zohreh Rasouli, Izahra University (Iran)

11:10 - 12:30

3D IMAGING AND STANDARDS

Session Chair: Eric Landsberg, MOMA (USA)

Applying Standards to Three Dimensional Object Photography, Joseph Coscia, Jr., The Metropolitan Museum of Art (USA)
Measuring the Color and Appearance of Artwork Using Polarization-Enhanced Photometric Stereo and Multi-Filter RGB Imaging,

Roy S. Berns and Tongbo Chen, Rochester Institute of Technology (USA)

3D Modelling of Cultural Objects in the V&A Museum: Tools and Workflow Developments, James Stevenson, Victoria and Albert Museum, (UK)

The Digital Imaging Project for the Instruments of the Sousa Archives and Center for American Music, Angela M. Waarala and Michael Tang, The University of Illinois Library at Urbana-Champaign (USA)

14:00 - 16:00

IQ TESTING AND STANDARDS

Session Chair: Christoph Voges,
consultant (Germany)

Moving Quality Analysis to the Cloud, T. Zaman, Pictura Imaginis bv (the Netherlands)
Metamorfoze Preservation Imaging Guidelines Version 1.0, Hans van Dormolen, Koninklijke Bibliotheek and National Library of the Netherlands (the Netherlands)

Targeting for Important Color Content: Near Neutrals and Pastels, Don Williams, Image Science Associates, LLC, and Peter D. Burns, Burns Digital Imaging (USA)

Imaging Error in Large-Scale Digitization: Research Findings and Prospects for Automating Error Detection, Paul Conway, University of Michigan (USA)

Digitizing the Dream: The King Center Imaging Project-A Case Study, Scott Geffert, imagingetc, and Anand Sethupathy, JPMorgan Chase & Co Technology for Social Good Division (USA)

The Network is the File Format: PDF as an Epitome of the Challenges of, and Requirements for, Long-Term Use of Digital Content, Sheila M. Morrissey, Portico (USA)

16:30 - 18:00

BEHIND THE SCENES TOURS

See page 4

19:00 - 21:30

CONFERENCE RECEPTION

See page 2

Friday June 15, 2012

8:15 - 9:15

KEYNOTE SESSION FRIDAY

Session Chair: Jonas Palm,
National Archives of Sweden, (Sweden)

**“A Quick Fix?”: The Challenges of
Digitization Facing Developing Countries,**

John A. Aarons, *The University of the West
Indies, Jamaica (WII)*

9:20 - 10:20

COLLABORATION AND COSTS

Session Chair: Torsten Johansson,
National Library of Sweden (Sweden)

Costs of Archival Storage, *Ulla Bøgvad
Kejser, The Royal Library; Anders Bo Nielsen
and Alex Thirifays, The National Archives
(Denmark)*

**Embedding Digital Preservation Across the
Organisation: A Case Study of Internal
Collaboration in the National Library of
New Zealand,** *Cynthia Wu, National Library
of New Zealand (New Zealand)*

**Building a Cooperative Infrastructure for
Digitisation,** *Anders Söderbäck,¹ Per
Cullhed,² Henrik Johansson,³ and Martin
Malmsten³; ¹Stockholm University Library,
²Uppsala University Library, and ³The National
Library of Sweden (Sweden)*

11:00 - 12:40

NOVEL CAPTURE

Session Chair: Larry Telford, FamilySearch (USA)

**Signal Quality in Audiovisual Digital
Preservation,** *Richard Wright, Preservation
Guide (UK)*

Unlocking the Transparent Archive, *Olaf
Slijkhuis, Pictura Imaginis (the Netherlands)*
**Dying Technologies: The End of 35mm Slide
Transparencies,** *Tina Weidner, Tate Gallery (UK)*
**Zooming in on the Big Picture: Digitization
of Nitrate Panoramic Film,** *Carla Klück and
Louise Perrault, Library and Archives Canada
(Canada)*

Digitizing and Archiving of all Information

Taken from Rare Blockbooks, *Peter
Meinlschmidt, Wilhelm-Klauditz-Institute and
Fraunhofer-Institute for Wood Research; Bettina
Wagner, Bayerische Staatsbibliothek (BSB)
Munich; and Volker Märgner, Technische
Universität Braunschweig (Germany)*

14:00 - 15:00

COMPLIANCE

Session Chair: Osmo Palonen,
Mikkeli University of Applied Sciences (Finland)

**Compliance Conundrums: Implementing
PREMIS at Two National Libraries,**
*Haliza binte Jailani, National Library Board
(Singapore), and Peter McKinney, National
Library of New Zealand Te Puna Matauranga
o Aotearoa (New Zealand)*

**Integrity Check in the Trusted Digital Reposi-
tory,** *Chien-Yi Hou and Richard Marciano,
University of North Carolina at Chapel Hill (USA)*
**Renewing the Quality Management System of
MDAS,** *Anssi Jääskeläinen and Osmo Palonen,
Mikkeli University of Applied Sciences (Finland)*

15:40 - 17:00

**IMAGE PROCESSING AND
JPEG 2000**

Session Chair: Volker Märgner,
Technische Universität Braunschweig (Germany)

**Optimized Still Image Batch Processing of
Special Collections Bound Monographs and
Manuscripts Using DNG, JPEG 2000, and
Embedded XMP Metadata,** *Michael J.
Bennett, University of Connecticut (USA)*
**Improved Validation and Feature Extraction
for JP2 (JPEG 2000 Part 1) Images,**
*Johan van der Knijff, Koninklijke Bibliotheek
and National Library of the Netherlands (the
Netherlands)*

**Error Correction and Recovery in
Compressed Images for Digital Preservation,**
*Robert Buckley, University of Rochester /
NewMarket Imaging (USA)*

**Using a Collaborative Experimentation
Framework for Analysing the Influence of
JPEG2000 Compression on the OCR Result,**
Sven Schlarb, Austrian National Library (Austria)

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