PRELIMINARY PROGRAM

Archiving 2008
June 24–27, 2008
Bern, Switzerland

www.imaging.org/conferences/archiving2008

General Chair:
Rudolf Gschwind, University of Basel

Cooperating Societies
AIC American Institute for Conservation of Historic & Artistic Works
ALA ALCTS Association for Library Collections and Technical Services
CNI Coalition for Networked Information
DLF Digital Library Federation
DPC Digital Preservation Coalition
ECPA European Commission on Preservation and Access
ISCC Inter-Society Color Council
IOP Institute of Physics
MCN Museum Computer Network
OCLC Online Computer Library Center
RPS Royal Photographic Society

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IS&T Sustaining Corporate Members
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IS&T also acknowledges the support of

We thank the University of Bern,
Burgerbibliothek Bern, and the Zentrum Paul Klee
for their support of Archiving 2008.

Conference Overview

We are pleased to announce the program for the fifth IS&T Archiving Conference.

The Archiving Conference brings together an international gathering of experts from industry, academia, governmental institutions, non-profit organizations, archives, libraries, museums, and research labs who share a commitment to addressing the challenges of archiving modern and historic materials in an increasingly digital world.

The center-piece of Archiving 2008 is a stellar program of technical papers, arranged in a single-track format to promote the interchange of information across specialties in the field. Each day begins with a keynote address as follows:

- **Wednesday**: Jean-Frederic Jauslin, Swiss Federal Office of Culture, "Preserving the Nation’s Collective Memory: Challenges, Problems, and Solutions"
- **Thursday**: Richard Wright, BBC, “Archivists of the World: You Have Nothing to Lose but Your Shelves!”

The technical program includes 34 oral presentations complemented by more than 30 interactive papers, which will be presented on Thursday afternoon. The Interactive Paper Session—held on Thursday afternoon—is a key feature of the conference, providing the opportunity for authors and attendees to mingle and discuss results using a variety of media formats. All technical sessions will take place at the University of Bern, which is in the center of the Swiss capital city, overlooking the heart of the city.

In addition to a strong technical program, this year’s meeting features a comprehensive short course program (see page 10) and includes ample time for networking and socializing with peers. We are excited to be hosting the welcome reception at the Burgerbibliothek and the conference reception at the famous Zentrum Paul Klee.

Archiving 2008 attendees will also have the opportunity to visit and tour Bern digital preservation operations at the Swiss National Library. All tours will take place Friday afternoon; details are found on page 4.

Join us in Switzerland’s capital for this unique gathering of international know-how in digital archiving, imaging, and digital preservation.

—Rudolf Gschwind
Archiving 2008 General Chair
Venue, Accommodations, and Transport

Please refer to map on page 9

About Bern
A UNESCO World Heritage Site since 1983, the vibrant Swiss capital of Bern, with its charming covered arcades, cobbled streets, and historic buildings, will host Archiving's first conference in Europe.

Conference locations
Technical sessions will take place in Hauptgebäude Building at the University of Bern. The university is located on a hill overlooking the historic downtown center and is easily accessed via an elevator located next to the main train station.

The welcome reception will take place at Burgerbibliothek Bern (www.burgerbib.ch/e/index.html), a short tram ride or 10-minute walk from the main train station. The Burgerbibliothek houses a treasure trove of Bern history and culture, as well as many important international documents and ancient codices.

To/from Bern
Bern is served by train and air. While the Bern-Belp airport offers a number of flights, the airports in Geneva and Zurich may provide better options. There is direct rail service from/to the international airports in Geneva (100 minutes) and Zurich (70 minutes). By train, Bern connects directly to the international railway network. Details on transportation options can be found at www.berninfo.com.

Information on visa requirements can be found at www.bfm.admin.ch/bfm/en/home/themen/einreise/Ausweise_und_Visumvorschriften.html and downloaded from the conference website.

Accommodations
IS&T has arranged for a limited number of hotel rooms within the city of Bern. All reservations for these rooms will be on June 27, 7:00 – 11:15

The EuroCup is being held throughout the month of June in various cities throughout Europe, including Bern. While the last game held in Bern will be on June 17, numerous soccer/football fans may descend on the city during the rest of the Cup to watch games on a big screen in the city center.

Travel to/from various parts of Europe may also be busy and security is likely to be higher. Likewise, hotel accommodations will be tighter. Please plan your trip early and accordingly.

The EuroCup schedule can be found at www.uefa.com/competitions/euro/index.html.

Special Note on Travel and Lodging
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The conference reception will take place at the Zentrum Paul Klee (www.zpk.org/www/en/pub/web_root.cfm), a museum dedicated to the world-famous artist and a short tram ride from downtown.

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Conference Tours: Swiss National Library

Friday, June 27, 2006, 14:30-16:00

There is no cost, but advance registration is required for all tours; see Hotel/Tour registration form on page 20. As the number of participants is limited, registration is on a first come/first served basis and dependent on conference registration. Participants are responsible for getting themselves to the tour site on time. The Swiss National Library can be accessed via Bus no. 19 (direction Elefenua), Aegertenstrasse stop.

Further information and details will be sent via e-mail to all registered participants approximately one month prior to the start of the conference.

Print Collection and Swiss Archive for Cultural Heritage

The classic collection departments of the print collection contains printed graphics from the 17th thru 21st century; photography from the 19th thru 21st century; art books, editions and portfolios from the 20th and 21st century; and a post card collection. In addition, the department contains a large poster collection from the 19th thru 21st century and the archives of Daniel Spoerri, Karl Gerstner, and Johannes Gachmann. The photographic collection mainly focuses on landscapes and portraits of famous Swiss citizens. In 2007, the Swiss Archive for Preservation of the Graphic Collection became part of the institution. The Archive is in charge of finding new exemplars from the subject areas of archeology, preservation of ancient monuments, landscape and city photography, architectural and art history, and folk culture.

The tour will focus on two large digitization projects. The Swiss Catalog for Posters has been established for 10 years. Linked to that is an archive database being organized to complete the Swiss Archive for Preservation and the Swiss Literary Archive. The project’s aim is to manage all archived goods of the National Library and to make these available to clients via the Internet. The physical repositories of the collection will be the last stop on the tour.

Center of Excellence (Paper Preservation)

Since the mid-1990s, the Swiss National Library has increasingly developed as a center of excellence for paper preservation. The construction of a new and modern subsurface storage room, the purchase of a high-capacity paper neutralizing machine, and the development of a catastrophe plan has made the Swiss National Library not only a national, but an international, leader in the consideration of preservation issues. As part of its mandate, the Swiss National Library offers its knowledge and services to other institutions.

Tour attendees will be given a guided tour of the whole department, including the subsurface store room and the preservation studios.

Meeting Point for both tours:
Reception area of the Swiss National Library, Hallwylstrasse 15.

Technical Program

Wednesday June 25, 2008

8:30 – 9:20

Keynote Session
Session Chair: Rudolf Gschwind, University of Basel (Switzerland)

Preserving the Nation’s Collective Memory: Challenges, Problems and Solutions,
J.-F. Jauslin, Federal Office of Culture (Switzerland)

9:20 – 12:10

Creating and Managing Digital Collections, Formats, and Metadata
Session Chair: Christoph Graf, University of Bern (Switzerland)

Ingest Workflow for Electronic Publications at the Swiss National Library, Hansueli Locher, Swiss National Library (Switzerland)

From Digitization to Repository—A Case Study on Creating a Managed Environment, Kevin Devorsey, Steven Puglia, and Erin Rhodes, US National Archives and Records Administration (USA)

Bringing Self Assessment Home: Repository Profiling and Key Lines of Inquiry Within DRAuMBORA (Focal), Andrew McHugh, Seamus Ross, and Perla Innocenti, University of Glasgow (UK), and Raivo Ruusalepp and Hans Hofman, National Archives of the Netherlands (The Netherlands)

Archival Structures, Workflows, and Distributed Systems, Jürgen Enge, Zurich University of the Arts (Switzerland)

Challenges of Long-Term Archiving in the Pharmaceutical Industry, Jurg Hagmann and Anita Paul, Novartis (Switzerland)

Make your plans early and save! Early Conference and Short Course Registration Fees Available until May 15

Archiving 2008
Archivists of the World: You Have Nothing to Lose but your Shelves!, Richard Wright, BBC (UK)

Optical Soundtrack Restoration: The Image Processing Approach, Bernard Besserer, Abdelali Hassaine, and Ethenne Decenciere, Universite de La Rochelle (France)

Color Accurate Photography Using Unmodified Digital Cameras and Theatrical Filters, John Redman, Hewlett-Packard Company, and Mark Mudge, Cultural Heritage Imaging, (USA)

Best Practices for Digitizing Photographs: A Network Analysis of Influences, Paul Conway, University of Michigan (USA)

Digital Maps of Historical Buildings: Preservation Issues and Solutions, Christoph Schlinder and Peter Wullinger, University of Bamberg (Germany)

Digital Collection of Moving Images: A Use Case Scenario from the World of Broadcast Television, Unni Pillai and Kara Van Malissen, New York University (USA)

A Holistic Approach for Establishing Content Authenticity and Maintaining Content Integrity in a Large OAIS Repository, Katherine Zwaard and Lisa LaPlant, US Government Printing Office (USA)

Canadian Forces Image Collection Digitization Plan, Seige Tremblay and Marc Comeau, National Defense Image Library and Archives (Canada)

Evaluation of the Digilab Archive System, Hugo Quistbert, Luleå University of Technology (Sweden)


International Polar Year 2007 – 2008: Resources on Polar Research in the NOAA Central Library Network, Anna Ficolek, NOAA Central Library (USA)

Applying Artists’ Methodologies to Archiving: A Case Study of John Latham’s Archive, Athanasios Velos and Simon Gould, University of the Arts, (UK)


The Significance of Quality in Mass Book Digitization Projects, Lotti Belkhir, Kinters Technologies (USA)

Imaging, Microfilm, and Digital Preservation continues

Metamorfose Preservation Imaging Guidelines, Hans van Dormolen, Koninklijke Bibliotheek (The Netherlands)

Digitizing Simplified: Large-scale Digitizing at the Customer’s Request, Marc Holtman and Ellen Fleurbady, Stadsarchief Amsterdam (The Netherlands)


Imaging, Microfilm, and Digital Preservation continues

An Inexpensive Web-Based Finding—Identification Aid for Nitrate Negatives, Employer User-Supplied Information, Andrew Rodger, Library and Archives Canada (Canada)

Life Beyond Uncompressed TIFF: Alternative File Formats for Storage of Master Image Files, Robert Gillesse, Judith Rog, and Astrid Verheusen, National Library of the Netherlands/ Koninklijke Bibliotheek (The Netherlands)

Practical Applications to Adobe’s eXtensible Metadata Platform on the Web, Hyung J. Park and Dong H. Ha, Chung-Ang University (Korea)

The Study on Web Archive: The Description and the Format Approach, Li-Chiao Wang and Shien-Chiang Yu, Academia Sinica (Taiwan)

Open Horizons: Archiving Perspectives for Services and Frameworks, Stefan Bürer, Historisches Museum Basel (Switzerland)

Digitalization: Advancement in the Study and Preservation of Coins, Ethan Gruber, University of Virginia (USA)

Spectral Image Acquisition of Icons, Markiku Houta-Kasari, Jukka Antikainen, Muskan Megmi, Mitwa Kaeniba, Timo Jaaskelainen, and Jussi Parkikinen, University of Joensuu (Finland)

Measuring and Managing Digital Image Sharpening, Don Williams, Image Science Associates, and Peter Burns, Carestream Health, Inc. (USA)

A New Proposal for the Accurate Recovery of Spectral Reflectances of Imaged Objects Without Prior Knowledge, Nonyuki Shimano and Mikiya Hironaga, Kinki University (Japan)

“Diasic”—and Other Finishing Techniques—Investigation of Light Induced Aging, Sebastian Dobruskin, Stefan Wülfert, and Sabine Zorn, University of the Arts Berne (Switzerland)

Permanent Public Access and GPO’s Content Life Cycle Strategies and Solutions, Andrew Rodger, Library and Archives Canada (Canada)

Digital Image Preservation—A Consumer Focus, Hans van Dormolen, Koninklijke Bibliotheek (The Netherlands)

Digitizing Simplified: Large-scale Digitizing at the Customer’s Request, Marc Holtman and Ellen Fleurbady, Stadsarchief Amsterdam (The Netherlands)


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Preservation Copying of Endangered Negative Collections, Ulla Bagradz Kejser, The Royal Library of Denmark (Denmark)

On the Economics of Microfilm—Does Film Outpace Today’s Electronic Storage Systems?, David Gubler, Fachlabor Gubler AG (Switzerland)

Storage of Audio Data on Microfilm for Long Term Storage: Presentation of the Project

The Philippine Perspective of Digitizing Printed Heritage Materials, Salvacion M. Arlan and Eimee Rhea C. Lagrama, University of the Philippines Diliman (Philippines)

The Philippine Perspective of Digitizing Printed Heritage Materials, Salvacion M. Arlan and Eimee Rhea C. Lagrama, University of the Philippines Diliman (Philippines)

The Value Added Application of Taiwan’s National Digital Archives Program (NDAP), Li Kuei Hsueh, National Chengchi University, and Li-Chiao Wang, Academia Sinica (Taiwan)

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Short Course Program: Tuesday, June 24, 2008

**TRACK 1: CASE STUDIES**

**T1A: Making Digital Preservation Affordable: Values and Business Models**

8:00 – 10:00 [2 hours]

Instructor: Simon Tanner, King’s College London

Users and other stakeholders define the economic factors by which digital information is valued, used, and ultimately retained. In looking to finance digital preservation there are a number of different issues to consider, including business planning, risk management, possible revenue streams, and a clear cost/benefit relationship. This short course discusses strategic considerations related to the effective financing of digital preservation and offers a means of developing a cost/benefit justification to help secure the financial underpinning needed to make institutional digital preservation a realistic proposition. The course covers models for monetizing content; the role of public repositories; costs, business models, and OAIS; balancing costs with benefits and institutional mission; risks and consequences; and justifying and building a case for digital preservation.

**Benefits**

This course will enable the attendee to:
- Understand different cost and business models associated with digital preservation
- Determine how to build and justify a plan for digital preservation that benefits an institution’s mission

**Intended Audience**

Managers in the archive, library, and museum communities who work with digital preservation or on conservation strategies.

Simon Tanner is the Director of King’s Digital Consultancy.

**T1B: How to Save Audiovisual Archive Content by Digitization — And then How to Save the Digits (in Archives Great and Small)**

10:15 – 12:15 [2 hours]

Instructor: Richard Wright, BBC

This course reviews audiovisual preservation/digitization projects across Europe, beginning with major broadcast archives, but also including the requirements and general possibilities for smaller collections. A particular issue is addressing the many audiovisual collections that are part of institutions that have little or no audiovisual technical expertise. Are these collections doomed? How can non-specialists get the information and the services—not to mention budgets—they need to preserve this material and make it accessible? Audiovisual archives are at the start of a revolution: Content hitherto inaccessible can now be put on YouTube; digital storage costs are 99% cheaper than 15 years ago; and there is a groundswell of support for public domain and Creative Commons repositories. Audiovisual “preservation and access” success stories are presented and the question of what happens after digitization—and a future roadmap for this material—is discussed.

**Benefits**

This course will enable the attendee to:
- Understand audiovisual preservation/digitization requirements for large and small collections
- Determine the budget needed to preserve collections
- Discover how to protect archival materials with little or no expertise
- Explore the future of digitization

**Intended Audience**

Anyone responsible for collections that include audiovisual materials, or anyone interested in their preservation and related access issues.

Richard Wright has been working on audiovisual preservation for the BBC since 1974. He headed the EC project Presto (2000-2002), which developed the idea of efficient broadcast archive digitization using a Preservation Factory: A group of European archives extended this work to all audiovisual collections in the PrestoSpace project (2003-2007). Wright’s “Preservation Guide” (wiki.prestospace.org) is the top result in Google when one searches ‘audiovisual preservation’. His background is acoustics, speech, and signal processing research. He holds a PhD from Southampton University.

**T1C: Significant Properties and Their Role in Digital Preservation**

13:45 – 15:45 [2 hours]

Instructors: Stephen Grace, Centre for eResearch; Neil Grindley, Joint Information Systems Committee; and Grant Young, The Technical Advisory Service for Images

To enable digital images and other objects to remain both accessible and meaningful over time, it is critical to understand what aspects of them need to be preserved. Recent work in this area has looked at this issue using the concept of ‘significant properties,’ as well as a variety of digital object types, including raster images, vector images, moving images, structured text, audio, and software. Three significant properties of a vector graphic, for example, might include line width, opacity, and color, the primitives and associated attributes that may be described differently by different graphics systems (e.g., PDF/A, SVG 1.1, WebCGM 2.0).

An organization with curatorial responsibility for digital objects cannot assert or demonstrate the continued authenticity of those objects over time, nor across transformation processes, unless it can identify, measure, and declare the specific properties on which that authenticity depends. Nor can it undertake the preservation actions required to maintain access to those objects unless it can characterize their current technical representations with sufficient detail. Confidence at the object level is also informed by the trust placed in the organization curating the files.

The purpose of this course is to look at the nature and extent of recent work in the area of ‘significant properties;’ to give a
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Archiving 2008

T1D: SIARD — A File Format for Archival of Relational Databases
16:00 – 18:00 (2 hours)
Instructors: Krystyna W. Ohnesorge and Hartwig Thomas, Swiss Federal Archives

As central information about today’s administrative activities is often stored in databases, it is important to archive database content. The Swiss Federal Archives (SFA)—and other archives—are obliged to archive these types of administrative “documents” in a way that ensures accessibility of database content for at least 50 years. Unfortunately no standardized format exists for archiving database content over several decades. Although the concept of relational databases in the 1970s was based on the assumption that data have a longer life expectancy than software or hardware, only the query language SQL has been widely standardized. Oracle table spaces, MS Access MDB-files, and most other database file formats are proprietary and therefore not suited for archival needs. SFA has developed a storage format for relational databases and SIARD software (software-independent archival of relational databases) for handling database content archived in this format. The SIARD format is an open format based on the standards SQL: 1999 and XML and therefore it is appropriate for archiving database content.

This course explains how SIARD was developed and will be used by SFA beginning in the second quarter of 2008. The SIARD format contains all the base tables of the database and its meta data in XML files that are contained in a single ZIP file. The database metadata describing schemas, tables, columns, and other database content is discussed during the course, as is the structure of the SIARD XML file published by SFA and automatic verification abilities. The SIARD software permits examining database data, as well as loading archived data into a commercial database system. Practical examples of how this can be done and how SIARD is used by SFA is also presented in this course.

Benefits
This course will enable the attendee to:
• Understand the problem of archiving relational databases
• Evaluate the decisions leading to the SIARD format
• Learn the basic structure of the SIARD format
• Explore the possibilities of using SIARD software for archiving relational databases and searching in them

T2A: Color Image Workflows and Architecture for Archiving Applications
8:00 – 12:15 (4 hours)
Instructor: Sabine Süsstrunk, Ecole Polytechnique Fédérale de Lausanne (EPFL)

Images optimized for archiving, images optimized for viewing, and images optimized for printing usually do not contain the same digital values, nor should they. Depending on the intended usage of a digital image, its state (color encoding, resolution, compression, processing, and rendering) needs to be adjusted. This course covers workflow—from image capture to visualization to archiving—and discusses the appropriate image parameters for each step.

Special Short Course Offer
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Hartwig Thomas, CEO Enter AG in Zurich (www.enter-ag.ch/hartwig/cv.html) is an implementer of SIARD 2.0. He received his PhD on image halftoning algorithms at the IBM Research Laboratory in Zurich.

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Grant Young is a Technical Research Officer with Technical Advisory Service for Images (TASI). TASI, a national JISC service, provides support for those creating, managing, using, and preserving multimedia resources. Grant has a background in library, archive, and digitisation project management. In addition to his work with TASI, he is managing a project within the JISC’s Digitisation Programme.

Hartwig Thomas is head of the “Unit Innovation and Preservation” of the Swiss Federal Archives, Bern (www.bar.admin.ch), received her PhD in lossless image compression at the University of Zurich. At SFA, her unit is responsible for record management, digital archiving and preservation. The Unit is responsible for establishing and setting Federal Government standards—as well as advises government agencies—in these three areas.

Krystyna W. Ohnesorge, head of the “Unit Innovation and Preservation” of the Swiss Federal Archives, Bern (www.bar.admin.ch), received her PhD in lossless image compression at the University of Zurich. At SFA, her unit is responsible for record management, digital archiving and preservation. The Unit is responsible for establishing and setting Federal Government standards—as well as advises government agencies—in these three areas.

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Instructor: Sabine Süsstrunk, Ecole Polytechnique Fédérale de Lausanne (EPFL)

Images optimized for archiving, images optimized for viewing, and images optimized for printing usually do not contain the same digital values, nor should they. Depending on the intended usage of a digital image, its state (color encoding, resolution, compression, processing, and rendering) needs to be adjusted. This course covers workflow—from image capture to visualization to archiving—and discusses the appropriate image parameters for each step.

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Benefits
This course will enable the attendee to:
• Understand image formation, colorimetry, and color management
• Apply ICC color management to imaging workflow
• Recognize different image states and their relevancy in image archiving environments
• Identify the correct image capture parameters (scanners and digital cameras) and color management workflow for image archiving and visualization needs
• Define color image encodings, resolution, file formats, and compression requirements for image files

Intended Audience
Imaging managers and technicians in an image archive or library who are involved in the digitization, processing, and maintenance of digital images, and engineers who develop hardware and software applications for the archival community. Basic knowledge of digital imaging is assumed.

Sabine Siestrunk is Professor for Images and Visual Representation at the Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland. Prior to that she was the principle imaging researcher for Corbis Corp. in Seattle, WA. Siestrunk is a member of ISO TC42 WG18 and JWG20/22/23, the ISO committees defining digital photography and color imaging standards, and the director of CIE Division 8 (Image Technologies). She has lectured and published extensively in the area of color imaging, and is a consultant to museums, archives, and companies.

T2B: Color Display Holography
13:45 – 15:45 (2 hours)
Instructor: Hans I. Bjelkhagen,
Centre for Modern Optics

While holography has been around since the mid-1960s, so far interest in using holography to display objects has been rather limited mainly because of the monochrome nature of the image. Recent development in improved imaging techniques and recording materials—the most important being the possibility of recording 3D images in full color—have caused an increased interest in display holograms.

Color holographic imaging technology has many potential applications and markets. For example, 3D imaging can be used for the display of expensive or unique art pieces, museum artifacts, advertising, etc. The virtual color image behind a holographic plate represents the most realistic-looking image of an object that can be recorded today. The extensive field of view adds to the illusion of beholding a real object rather than an image of it. By choosing the optimum recording laser wavelengths within the spectrum, good color rendering can be achieved. It may sound strange, but color holography may become an important reproduction technique for 2D objects, such as oil paintings, as well. Holographic reproductions provide extremely realistic-looking images, showing texture details such as brush strokes and the painter’s signature. In addition, holographic reproductions do not fade nor change color even if continuously on display. This fact is of importance from an archival point of view as well.

This short course introduces attendees to this technology and its applications.

Benefits
This course will enable the attendee to:
• Understand how color holograms are produced and prepared for display
• Discover potential application for and uses of color holography in museum and other collections
• Learn about the benefits of holography for collectors, archivists, and researchers.
• Understand analog vs. digital holograms
• Clarify color fidelity issues
• Review holograms and image permanence, including care of holograms
• Explore display techniques and lighting
• Learn about the holographic recordings of paintings

Intended Audience
Curators, archivists, conservators, researchers, and those who work in the commercial and promotional side of museums and collections.

Hans I. Bjelkhagen is Professor of Interferential Imaging Sciences at the North East Institute for Higher Education, Wrexham at the Centre for Modern Optics in North Wales. During the past 10 years, Bjelkhagen has been most recognized for his work in color holography, holographic recording materials, and Lippmann photography. At the Centre for Modern Optics, he conducts research on 3D imaging, color holography, color HOEs, holographic recording materials, and Lippmann photography. Bjelkhagen has recorded many holograms for museums, published more than 100 papers in refereed journals and conference proceedings, and holds nine international patents. His most important academic contribution is Silver-Halide Recording Materials for Holography and Their Processing, considered to be the standard textbook on the subject.

T2C: Image Science for the Archiving Community
16:00 – 18:00 (2 hours)
Instructor: Alan Hodgson,
Alan Hodgson Consulting

Image Science is a broad topic covering parameters that can be used to describe an image. This course gives a concise overview of what image science can offer the Archiving community. It is equally applicable to images in the digital or analog domain. It is therefore pertinent to any hard copy technology such as paint, traditional photo, or new recording media such as inkjet as well as digital images. The course covers issues such as image content, noise, tonal range, and digitization as a brief overview. The course also covers the image science considerations of digitization by whatever means, display, and any subsequent printing. The course is illustrated with case studies from printed and digitized images.

Benefits
This course will enable the attendee to:
• Understand the basic principles of image science as applied to the Archiving community in the widest sense
• Have the knowledge to access resources available to investigate the elements of this presentation to a greater depth, including books, periodicals, shows, and conferences
• Summarize the tools of image science and how these can be best used in projects
• Understand image science terminology used in product literature in order to better evaluate research papers and proposals
• Be aware how new technology from various disciplines is finding application in image science and look out for the opportunities this presents

Intended Audience
Intended to provide an overview of the topic to archivists, curators, conservators, and all those who have an interest in what makes an image, this course requires no previous knowledge of the topic. Although many works on this subject delve deep into the mathematics of the discipline, this course avoids all this by using visual imagery to describe and explain the topic.

Alan Hodgson is an independent consultant based in the UK with more than 20 years experience in image science. A degree in colorant chemistry took him into the photographic industry and scientific imaging and inkjet printing. He currently works on projects involving imagery from astrometric to microscopic dimensions for a range of clients, including the archiving community. Because of his wide technical background, Hodgson gives imaging issues a broader perspective with real examples. In addition to IS&T, he is active in the Royal Photographic Society and the Institute of Physics.
This course focuses on the materials, identification, and stability of digital prints used by contemporary artists. The aim of the course is to provide attendees with the knowledge and tools needed to handle the issues surrounding the acquisition and preservation of prints made from digital files, as well as to provide an understanding of the trends in imaging technology and artists’ use of modern photographic printing techniques.

**Benefits**

This course will enable the attendee to:

- Describe various digital printing processes used by photographers today
- Understand the materials used for the different processes
- Describe the permanence issues associated with the different processes
- Assess storage requirements for digital prints
- Explain some of the digital preservation issues connected to digital photography

**Intended Audience**

This course is intended for those in the archive, library, and museum communities who are creating, using, or preserving digital prints, and for technologists who want a better understanding of the issues surrounding digital prints in contemporary art collections.

Franziska Frey, professor in the School of Print Media at Rochester Institute of Technology, received her PhD in Natural Sciences (Concentration: Imaging Science) from the Swiss Federal Institute of Technology in Zürich (1994). Before joining the faculty of the School of Print Media, she worked as a research scientist at the Image Permanence Institute at RIT. Frey 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 dealing with technical metadata and digital photography and is a member of the IS&T Board of Directors.

Martin Jürgens studied photography and design at the Technical University in Dortmund, Germany. He holds an MS from Rochester Institute of Technology and a Master of Art Conservation from Queen’s University in Kingston, specializing in paper conservation. Since 2001, he has been working as a photographer conservator in private practice in Hamburg, Germany. Jürgens areas of research and teaching include historic and contemporary photography, and the materials, chemistry, and preservation of digital prints.

**TRACK 3: HARD COPY ISSUES**

T3A: Contemporary Photography: Digital Prints
8:00 – 12:15 (4 hours)
Instructor: Franziska Frey, Rochester Institute of Technology, and Martin Jürgens, conservator

This course is designed for archivists, technicians, and anyone working with negative collections.

Stephanie Ogeneski is a Digital Imaging Specialist at the National Anthropological Archives, Smithsonian Institution. Prior, she served as the manager of the digital imaging facility at the Chicago Alburns Works. She received a Certification in Photograph Preservation and Archival Practice from the George Eastman House and was the recipient of Academic Specialist Grants through the US Embassy of Mexico Cultural and Academic Exchange Program. She has taught at Indiana and Purdue Universities and Simon’s Rock College of Bard.

Stephanie Ogeneski is a Digital Imaging Specialist at the National Anthropological Archives, Smithsonian Institution. Prior, she served as the manager of the digital imaging facility at the Chicago Alburns Works. She received a Certification in Photograph Preservation and Archival Practice from the George Eastman House and was the recipient of Academic Specialist Grants through the US Embassy of Mexico Cultural and Academic Exchange Program. She has taught at Indiana and Purdue Universities and Simon’s Rock College of Bard.

**T3B: Digitizing Historical Negative Collections**
13:45 – 15:45 (2 hours)
Instructor: Stephanie Ogeneski, National Anthropological Archives, Smithsonian Institution

This course gives those working with historical negative collections a fundamental understanding of the relationship between analog and digital images, and explores the approaches to consider when embarking on a digitization project to ensure accuracy in reproduction. Participants are given an overview of the historical material and how that material is conceived, captured, and translated from analog to digital within a digital environment. Digital guidelines and tone reproduction are also discussed.

**Benefits**

This course will enable the attendee to:

- Identify and evaluate image characteristics of analog materials: glass plate, nitrate, acetate, and polyester film base materials
- Learn about issues related to handling and special applications used in a digital environment related to the deterioration of these materials
- Identify and interpret digitization guidelines
- Assess workflow and quality control routines

**TRACK 4: PRESERVATION FORMATS**

T4A: A Look Inside the Portable Document Format (PDF)
8:00 – 12:15 (4 hours)

This course provides a peek inside the various aspects of the portable document format (PDF) including such areas as fonts, graphics, color, interactive elements, and security. Special attention will be paid to the use of PDF for “long-term archival storage of digital documents,” as spelled out in ISO 19005 (PDF/A-1).

**Benefits**

This course will enable the attendee to:

- Understand the various types of content that can be present in a PDF
- Explore features of PDF unsuitable for long-term archival storage
- Describe the goals and decisions embodied in the PDF/A standard
- Use common industry tools to create and validate PDF/A-conforming documents

**Intended Audience**

This course is suitable for anyone who currently works with or may work with PDF documents in the future. No prior knowledge of any specific area is assumed and everyone is welcome.

Leonard Rosenthal recently returned to Adobe Systems, Inc., as the PDF Standards Evangelist and a senior member of the Acrobat engineering staff, following almost 10 years of involvement in the PDF world having worked as the director of Software Development for Appligent, the chief innovation officer for Apago, and running the successful consulting business of PDF Sages.

**T4B: JPEG 2000 and other Formats for Image Preservation**
13:45 – 18:00 (4 hours)
Instructor: Robert Buckley, Xerox Corporation

This course begins with an introduction to commonly used digital image formats and image compression methods, which lays the groundwork for discussing and comparing formats for image preservation, with an emphasis on TIFF and JPEG 2000. TIFF is typically used to store uncompressed images; JPEG 2000 is a still image compression standard based on wavelet technology. JPEG 2000 is attractive for image preservation and access because it can handle a wide range of applications, including gigabyte and high-dynamic range images, spectral imaging, digital cinema, and on-line image collections. This course explains the key parts of the JPEG2000 standard, explores its features, demonstrates its capabilities, and discusses who is using it and why.

**Benefits**

This course will enable the attendee to:

- Describe the basics of commonly used digital image formats
- Understand the different approaches to image compression
- Compare and contrast TIFF and JPEG2000 as formats for image preservation
• Relate JPEG 2000 features and options to the requirements for image reservation
• Explain the value of JPEG2000 for image preservation

Intended Audience
This course is intended for those in the archive, library, and museum communities who work with images and image collections and who want to understand the tradeoffs between different image formats, what JPEG2000 has to offer, and how their archiving application may benefit from it.

Robert Buckley is a Research Fellow with the Xerox Innovation Group in Webster, NY. He is the Xerox representative on the US JPEG 2000 committee and was the Project Editor for Part 6 of the JPEG2000 standard, which defines the JPEG2000 file format for compound and document images. He was also the lead author for TIF-FX, the IETF standard file format for Internet fax, and currently chairs the CIE Technical Committee on Archival Color Imaging. Buckley is President of the Inter-Society Color Council and an IS&T Fellow and member of the Board. He is the Xerox Principal in the JPEG 2000 Collaboration with the US Library of Congress and is the author of the DPC Technology Watch Report on JPEG 2000.

TRACK 5: CAMERAS AND SCANNERS

TSA: Evaluating Digital Scanner and Camera Imaging Performance
8:00 – 12:15 (4 hours)
Instructors: Peter Burns, Carestream Health, Inc., and Don Williams, consultant

Many of today’s standards for characterizing imaging performance are based on image science principles. We begin by introducing this perspective and then describe its application to scanner and digital camera performance in an archiving environment. These standards and accompanying tools help the user control tone reproduction and evaluate manufacturers’ claims of resolution, dynamic range, and noise. We then identify several common image artifacts associated with digital image capture. Through examples, we describe how performance parameters can be monitored by summary measures acquired automatically as part of a quality assurance process.

Benefits
This course will enable the attendee to:
• Recognize image science principles for digital image conversion
• Describe existing standards to characterize scanner and camera capability and performance
• Connect today’s vernacular performance terms (e.g., dpi, bit depth, gamma, etc.) to science-based performance metrics
• Benchmark or audit a manufacturer’s scanner performance with the above metrics using publicly available standards, compliant software, and targets
• Understand summary measures for monitoring performance in workflows
• Identify several digital imaging distortion sources from image data

Intended Audience
Managers, engineers, and technicians charged with evaluating and monitoring scanner performance and understanding how performance metrics connect to other imaging system components, such as display, print, and processing.

Peter Burns works on image evaluation, modeling, and image processing for medical imaging systems at Carestream Health, Inc. He previously worked for Eastman Kodak Company and Xerox Corporation. Burns has taught imaging courses for many years, as an adjunct faculty member at RIT, at Kodak, and at previous Archiving conferences.

Donald Williams, a consultant formerly with Kodak Research Laboratories, 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 and contributes to several imaging standards activities.

T5B: Scanner and Camera Imaging Performance Workshop
13:45 – 18:00 (4 hours)
Instructors: Peter Burns, Carestream Health, Inc., and Don Williams, consultant

This workshop, new for 2008, is aimed at those interested in the practical application of imaging performance evaluation and control for collections. Following a brief review of current practice and standard methods, the course addresses several common problems faced by those providing imaging services, or seeking to improve image content. In each of the cases addressed, the selection and development of test plans, performance measurements, and simple analysis are discussed. Attendees have the opportunity to perform evaluations using analysis software provided, illustrating the uses and limitations for the methods described. This workshop complements TSA: Evaluating Digital Scanner and Camera Imaging Performance, but is also useful to those who do not attend the course or who have attended the course in the past.

Benefits
This workshop will enable the attendee to:
• Identify sources of performance variation in digital image conversion
• Describe several existing standards to characterize scanner and camera performance
• Understand user requirements for analysis software tools
• Develop test plans for performance investigation
• Apply summary measures to monitoring of performance

Intended Audience
Managers, engineers, and technicians interested in evaluating and monitoring scanner and camera performance. A general knowledge of digital scanner and camera operation will be assumed.

See instructor bios under TSA: Evaluating Digital Scanner and Camera Imaging Performance.
Archiving 2008 Hotel Registration

Name ________________________________
Title/Position _________________________
Company ________________________________________________________
Mailing Address ________________________________________________
Telephone __________________ Fax ___________ Email __________________

Arrival Date and Time ____________________ Departure Date __________

Please prioritize your hotel preference in the following list:

<table>
<thead>
<tr>
<th>Hotels</th>
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<td>Hotel Continental double room with twin beds CHF150</td>
<td>June 24-26</td>
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<td>Hotel Kreuz Bern single room CHF140</td>
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<tr>
<td>Sorell Hotel Ador single room CHF155</td>
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<tr>
<td>Sorell Hotel Arabelle single room CHF135</td>
<td>June 24-26</td>
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A major credit card is needed to hold your reservation: ___ MasterCard ___ VISA

Card# __________________________________ Exp. Date __________________
Charge Authorization Signature ________________________________________

You will receive confirmation of your reservation including cancellation and other policies for your hotel. By signing this form you authorize IS&T to make a reservation on your behalf and to provide the hotel with your credit card information for reservation guarantee. You are responsible for reconfirming your reservation and you will not hold IS&T responsible for any charges incurred because of cancellation, other changes, etc.

Archiving 2008 Tour Registration

Special Tours: “Behind the Scenes” at the Swiss National Library

Please see details on page 4 for tour descriptions, times, and location. There is no cost, but advance registration is required. As the number of participants is limited, registration is on a first come/first served basis and dependent on conference registration. Participants are responsible for getting themselves to the tour site on time. Further information and details will be sent via e-mail to all registered participants approximately one month prior to the start of the conference.

Name ________________________________
Title/Position _________________________
Company ________________________________________________________
Mailing Address ________________________________________________
Telephone __________________ Fax ___________ Email __________________

I have registered for Archiving 2008 and would like to participate in the following tour (please indicate order of preference if you’re open to either tour):

___ Print Collection and Swiss Archive for Cultural Heritage
___ Center of Excellence (Paper Preservation) in the Swiss National Library

Archiving 2008 Conference Registration

Name ________________________________
Title/Position _________________________
Company ________________________________________________________
Mailing Address ________________________________________________
Telephone __________________ Fax ___________ Email __________________

If you are not a member, join IS&T today and calculate all conference fees based on member rates. Please note that memberships are charged in US dollars. You will be contacted by IS&T staff about your complementary journal subscription options. Please charge the card listed below with the following membership:

___ $95 US address ___ $105 overseas address ___ $25 Student


Conference registration includes admission to all technical sessions, coffee breaks, and the Welcome and Conference Receptions. Separate registration fees are required for short courses. There is no online registration for this event; fax form to +1-703-642-9094. All fees charged in Euros. You must register by June 8, 2008 to use this form; after that date, registration must be done in person at the conference venue.

Conference Registration (CHECK ONE) until May 15 after May 15 TOTAL

| IS&T Member | €370 | €440 | € |
| Non-member | €450 | €520 | € |
| Speaker/Session Chair Member | €280 | €350 | € |
| Speaker/Session Chair Non-member | €370 | €440 | € |
| Student (ID required) Member | €85 | €100 | € |
| Student Non-member | €100 | €115 | € |
| One-day (select below) | €225 | €295 | € |

❑ Wednesday ❑ Thursday ❑ Friday

Short Course Registration (be sure to multiply number of classes by per course fee and place on total line)

*Students may register for any short course at €35 until May 15; €50 after May 15.

___ 2-hour Member (per class) €100 €135 € ________
___ 2-hour Non-member (per class) €125 €150 € ________

___ 4-hour Member (per class) €150 €185 € ________
___ 4-hour Non-member (per class) €170 €205 € ________

Check all that apply: ❑ T1A ❑ T1B ❑ T1C ❑ T1D ❑ T2A ❑ T2B ❑ T2C ❑ T2D ❑ T3A ❑ T3B ❑ T3C ❑ T4A ❑ T4B ❑ T4C ❑ T5A ❑ T5B ❑ T5C

I have taken 8 hours of classes. (Put “–€40” on line to right.)

Does not apply to students rates. € ________

Other

___ Extra Archiving 2008 Proceedings (special advance purchase/on-site rate) €60 € ________
___ Additional Conference Reception Ticket €50 € ________

TOTAL € ________

Payment Method: ❑ Check (Check # ________) ❑ MC ❑ VISA (Please note we cannot accept American Express, Discover, or Diner’s Club for this meeting)

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Return this form with signed credit card authorization or check payable in Euros to IS&T, 7003 Kilworth Lane, Springfield, VA 22151 or fax to +1-703-642-9094 fax

Please note: To cover bank charges and processing fees, there is a cancellation fee of €50 until June 23, 2008. After that date, the cancellation fee is 50% of the total plus €50. No refunds will be given after July 23, 2008. All requests for refund must be made in writing.