PRELIMINARY PROGRAM

ARCHIVING 2016
April 19-22, 2016 • Washington, DC

www.imaging.org/archiving

General Chair: Kari Smith,
MIT Libraries, Institute Archives and Special Collections

IS&T

Sponsored by the Society for Imaging Science and Technology

About the Conference

The IS&T Archiving Conference brings together an international community of imaging experts and technicians as well as curators, managers, and researchers from libraries, archives, museums, records management repositories, information technology institutions, and commercial enterprises to explore and discuss the field of digitization of cultural heritage and archiving. The conference presents the latest research results on digitization and curation, provides a forum to explore new strategies and policies, and reports on successful projects that can serve as benchmarks in the field. Archiving 2016 is a blend of short courses, invited focal papers, keynote talks, and peer-reviewed oral and interactive display presentations, offering attendees a unique opportunity for gaining and exchanging knowledge and building networks among professionals.

Cooperating Societies

- American Institute for Conservation Foundation of the American Institute for Conservation (AIC)
- ALCTS Association for Library Collections & Technical Services
- Coalition for Networked Information (CNI)
- Digital Library Federation at CLIR
- Digital Preservation Coalition (DPC)
- IOP/Printing & Graphics Science Group
- ISCC – Inter-Society Color Council
- Museum Computer Network (MCN)
- The Royal Photographic Society

Photo: Christoph Voges.

Short courses offer an intimate setting to gain more in-depth knowledge about technical aspects of digital archiving. View all short courses beginning on page 3.

Conference Committee

General Chair
Kari Smith, MIT Libraries, Institute Archives and Special Collection (USA)

Program Chair
Ulla Bøgvad Kejser, Det Kongelige Bibliotek/The Royal Library (Denmark)

Short Course Chair
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Peter Burns, Burns Digital Imaging (USA)

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Mikko Lampi, Mikkeli University of Applied Sciences (Finland)

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Volker Märgner, Technische Universität Braunschweig (Germany)

Phil Michel, Library of Congress (USA)

Christoph Voges, consultant (Germany)

Kate Zwaard, Library of Congress (USA)

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Kari Smith, MIT Libraries, Institute Archives and Special Collection (USA)

David Walls, US Government Printing Office (USA)

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Cover image: Suzanne E. Grinnan

Conference At-a-Glance

All short courses and technical sessions will take place at the National Archives, 700 Pennsylvania Ave. Please enter at the corner of 7th St NW and Constitution Avenue where it say "Group Entrance". Please arrive early as you will need to go through security screening to enter the building.

Important Dates

Hotel registration deadline:
        March 7, 2016

Early registration deadline:
        March 21, 2016

Note: *There is NO onsite registration for this event due to National Archives rules. Attendees must register for the event ahead of time either online, by fax, or by calling the IS&T office.*

Registration Desk Open
Tuesday, April 19   7:45 am – 5:30 pm
Wednesday, April 20   8:00 am – 4:00 pm
Thursday, April 21   8:30 am – 3:00 pm
Friday, April 22   8:30 am – 12:30 pm

Tuesday, April 19
- Short Course Program (see page 3); separate registration fee required. You may register for short courses only; there is no requirement to attend the technical conference.
- Meet and Greet at Iron Horse Tap Room, 507 7th St NW, 5:30 pm; located 3 blocks from NARA.

Wednesday, April 20
- Opening Keynote: Spectral Imaging of Manuscripts: Recovery of the Past and Preservation for the Future; *Roger Easton, RIT, and Keith Knox, consultant*
- Exhibition
- Exhibitor Previews
- Technical Papers Program
  - Advanced Imaging Techniques
  - Asset Management
  - Interactive Paper Previews
  - Interactive Paper Session
  - Preservation Formats and Frameworks
- Conference Reception: Hill Country BBQ, 410 7th St NW

Thursday, April 21
- Society Awards
- Exhibition
- Technical Papers Program
  - Imaging Standards and Quality Assurance
  - Imaging Strategies and Workflows
  - Dissemination and Use
- Behind-the-Scenes Tours; see page 17 for details.
  - Library of Congress: Preservation Directorate
  - National Archives and Records Administration: NARA Innovation Hub
  - National Gallery of Art: Division of Imaging and Visual Services (DIVS)

Friday, April 22
- Closing Keynote: Implementing Practices that Lead to Use or Reuse of your Collections, *Emily Gore, Digital Public Library of America*
- Technical Papers Program
  - Metadata Standards and Implementation
  - Interactive Paper Session
  - Image Color Science and Analysis Tools
  - Evaluation and Impact
- Interactive Papers

The Venue: National Archives, Washington, DC

The National Archives—home to the US Declaration of Independence and Constitution—will host Archiving 2016.

Located in the heart of Washington, DC, the National Archives borders the National Mall, which is home to many of the Smithsonian Museums and the National Gallery of Art. Numerous cultural heritage institutions, the US Capitol, the White House, other government departments, national monuments, restaurants, and Metro transit stations are within easy walking distance. The 2016 meeting occurs at the end of the Cherry Blossom Festival, when the city's gardens and parks come alive with blooms.

Accommodation and Transportation

Lodging Accommodation
A special hotel rate of $159/night, including internet access, has been secured for Archiving 2016 attendees at the Sheraton Silver Spring Hotel in Silver Spring, Maryland. The hotel is located three blocks from the Silver Spring Metro Station. A 20-minute Metro ride (red line) takes attendees to Gallery Place/Chinatown, a short walk from the National Archives. Hotel reservations must be made by **March 7, 2016**.

Sheraton Silver Spring Hotel
www.sheratonsilverspring.com
8777 Georgia Avenue
Silver Spring, Maryland 20910

Rate: $159 + 7% occupancy and 6% state sales tax per night

Rate honored +3 days prior to and after the conference based on availability. Note: A $50 fee is incurred for checking out prior to your confirmed departure date. Be sure to make any changes before checking in.

To Reserve
via Online: http://bit.ly/1PAC0PB
via Phone: +1 301 589 0800
Reference: IS&T Archiving2016
Check in/out   3:00 pm/noon

Airport Information
For planning purposes, attendees may arrive at any of the three Washington, DC airports.
- Reagan National Airport (DCA) is 14 miles from the hotel. It offers the convenience of Metro access to Silver Spring with one train change; taxi rates are ~$35.
- Baltimore Washington International Airport (BWI) is 32 miles from the hotel by shuttle (~$30) or taxi (~$80); there is also a $7 bus to the Greenbelt Metro, with one Metro train change enroute.
- Dulles International Airport (IAD) is 30 miles from the hotel and hosts the most international flights. Shuttle/Metro combo, SuperShuttle (~$35), and taxi (~$80) service are all available from IAD.

Getting to National Archives
Metro (www.wmata.com) National Archives is served by the Gallery Place/Chinatown Staion (Red line) and Archives/Navy-Memorial/Penn Quarter Station (Yellow and Green lines).

Parking There is no parking at NARA itself. Street parking is limited both in terms of length of time and availability. Garage parking is recommended.

Weather The average temperature in April is 57°F/14°C. Some rain can be expected.

Short Course Program: Tuesday, April 19th

NEW for 2016

ArchSC01: Computational Photography Techniques for Cultural Heritage Documentation and Archiving: Reflectance Transformation Imaging (RTI) and Photogrammetry

9:00 am – 12:00 pm (3 hours)

Instructors: Carla Schroer and Mark Mudge, Cultural Heritage Imaging

Through lectures, demonstrations, and discussion, this short course provides a condensed overview of computational photography and its application to cultural heritage. Computational photography extracts and synthesizes information from image sequences to create a new image containing information not found in any single image in the sequence. This course offers an intensive introduction to the technologies, software, photographic equipment, and methods for reflectance transformation imaging (RTI), and 3D photogrammetry—techniques that are being applied to a variety of art objects and other examples of material culture.

RTI creates scientific digital representations of an imaging subject's shape and color. These digital representations are generated from image sequences where the light illuminating the photo's subject is moved to a new location for each photograph. The lighting information from this image sequence is mathematically synthesized into an RTI image. The subject's shape and color is examined in an RTI by interactively re-lighting the subject from any direction and applying mathematical enhancements within an RTI software-viewing environment.

RTI is used on a wide range of subjects, including documenting low-relief surfaces like paintings and engravings. The course shows examples from museums and historic sites including inscriptions, rock art, manuscripts, and paintings. It also provides an overview of free RTI software, including newly released and planned software updates. In addition, a

demonstration of the RTI photographic capture sequence, using standard digital photographic equipment is performed during the course and new research techniques using these data sets are presented.

The first half of the course features new tools for the near-automatic recording and archiving of RTI contextual and process metadata. The creation of Digital Lab Notebook (DLN), which serves the same function as a written scientist's lab notebook, is discussed. We explore the necessity for transparent evaluation of scientific digital representations. The goal is to establish the conditions under which a "real world" artifact can be digitally represented as a "digital surrogate", which can reliably serve as a digital stand-in that can be used for subsequent scientific or scholarly examinations. New software tools to aide in saving the appropriate material for a digital lab notebook are presented.

3D Photogrammetry refers to the practice of deriving 3D measurements from photographs. It can be used for documenting 3D subjects, monitoring changes to these subjects over time, and a wide range of other uses. Photogrammetry creates accurate and measurable 3D models in a wide range of scales. Recent technological advances in digital cameras, computer processors, and

computational techniques, such as sub-pixel image matching, make photogrammetry a portable and powerful technique. It yields extremely dense and accurate 3D surface data. It can be generated using a sequence of photos and captured with standard digital photography equipment, in a relatively short period of time.

The second half of the course explores how photographic sequences of a subject can be captured according to principles that maximize the available information from a series of viewpoints to yield the best results. We also see how these software platform-independent rule-based data sets can be transformed into 3D representations and confidently reused by others now and in the future.

Benefits

This course enables the attendee to:

- Have a clear understanding of two computational photography imaging techniques, how they are used, what they can reveal, and what is involved in adopting them in cultural heritage practice.
- Appreciate the open source RTI software tools, with freely available User Guides, a free user forum, and other supporting materials.
- Understand software independent photogrammetry image capture
- Learn about the Digital Lab Notebook (DLN), how archiving and reuse requirements are driving modifications to its development, and how to use it in the context of RTI

Intended Audience: There are no prerequisites. Anyone from novice to expert is welcome.

Carla Schroer is a co-founder and director of Cultural Heritage Imaging (CHI; culturalheritageimaging.org), a non-profit corporation that develops and implements new imaging technologies for cultural, historic and artistic heritage, and scientific research. Schroer has been active in the cultural heritage computational photography research community since 2002. Schroer leads the training programs at CHI, along with working on field capture projects with Reflectance Transformation Imaging, 3D photogrammetry, and related computational photography techniques. She also leads the software development and testing activities at CHI. She spent 20 years in the commercial software industry, managing and directing a wide range of software development projects including object oriented development tools, desktop publishing software, and Sun Microsystems' Java technology.

Mark Mudge is President and co-founder of CHI. Mudge has a BA in philosophy from New College of Florida (1979). He has worked as a professional bronze sculptor and has been involved in photography and 3D imaging for more than 20 years. He is a co-inventor, with Tom Malzbender, of the computational photography technique, Highlight Reflectance Transformation Imaging. He has published 14 articles and book chapters related to scientific imaging of cultural heritage material and its long-term preservation. He serves on several international committees, including The International Council of Museums' (ICOM) Documentation Committee (CIDOC).

ArchSC02: Scanner & Camera Imaging Performance: Ten Commandments

9:00 am – 12:00 pm (3 hours)
Instructors: Don Williams, Image Science Associates, and Peter Burns, Burns Digital Imaging

This is a no-nonsense course on simple and achievable tools/techniques to build a solid digital imaging foundation for the capture of resilient and versatile digital images. We updated this course from a previously published Top Ten Tips publication several years ago. These include realistic color management, predictable behavior of branded capture devices, and new methodologies for rapid capture imaging. Specific and practical examples of the use of ISO standards and institutional guidelines in museum or library environments will be described. The elements of this course can be applied by digital image service providers, collection custodians, and device manufacturers.

Short Courses At-a-Glance
Descriptions for short courses begin on page 3.

Advanced Imaging for Archiving	Imaging Performance and Standards	Collection Building and Best Practices	Working with Digital Content
9:00 AM – 12:00 PM ArchSC01: Computational Photography Techniques for Cultural Heritage Documentation and Archiving: Reflectance Transformation Imaging (RTI) and Photogrammetry	**9:00 AM – 12:00 PM** ArchSC02: Scanner & Camera Imaging Performance: Ten Commandments	**9:00 AM – 12:00 PM** ArchSC03: Program Management for Cultural Heritage Professionals: An Introductory Workshop for Management of Digitization and Curation	**9:00 AM – 12:00 PM** ArchSC04: Fundamentals of Image and Video Compression
1:15 – 3:15 PM ArchSC05: Spectral Imaging: Spectral Capture and Processing	**1:15 – 3:15 PM** ArchSC06: Scan/Camera Imag. Perf: FADGI Guidelines . . .	**1:15 – 3:15 PM** ArchSC07: Digital Collection Development	**1:15 – 3:15 PM** ArchSC08: Automatic Cropping and Deskewing: Theory . . .
3:30 – 5:30 PM ArchSC09: Four-Light Imaging	**3:30 – 5:30 PM** ArchSC10: Intro. to Metamorfoze Preservation Guidelines . . .	**3:30 – 5:30 PM** ArchSC11: Assessing Formats for Preservation	**3:30 – 5:30 PM** ArchSC12: Curation, Collection, and Use of Web Archives

Benefits
This course enables the attendee to:
- Interpret and comply with customer imaging requirements.
- Establish accountability for imaging performance problems.
- Understand standards to characterize scanner and camera performance.
- Critically evaluate manufacturers' claims of resolution, color errors, and noise.

Intended Audience: Managers, engineers, and technicians responsible for evaluating and monitoring scanner and camera performance and emerging guidelines. This includes manufacturers, service providers, and content custodians. A working knowledge of digital scanner and camera operation and their common technologies will be assumed.

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 of digital imaging devices and imaging fidelity issues for the cultural heritage community. He has worked for a number of large cultural heritage institutes in practical implementation of image quality controls and is the prime architect for the Golden-Thread image quality evaluation tools. He has taught short courses for many years and contributes to several imaging standards activities.

Peter Burns is a consultant working in digital image evaluation, system monitoring, and image processing. He has experience in several areas of digital imaging: digital photography, mobile imaging, and cultural heritage.

NEW for 2016
ArchSC03: Program Management for Cultural Heritage Professionals: An Introductory Workshop for Management of Digitization and Curation
9:00 am – 12:00 pm (3 hours)
Instructor: Michael B. Toth, R.B. Toth Associates

This 3-hour course introduces cultural heritage professionals to best practices in program management. It focuses on methodologies for managing digital projects that

create or develop data, integrate new technologies and data, and/or support digital archiving and access. This includes digitization and curation projects for collecting, processing, accessing, archiving, and collaborating with digital data.

Instruction supports cultural heritage professionals as they manage successive stages of digitization and curation projects from initiation through production and operation, especially with changing technologies and tighter budget environments. The workshop utilizes examples and case studies of program management techniques and processes that are applicable to digitization and data curation programs of varied cost and complexity in a range of institutions around the globe.

This course provides project leaders, managers, and others working or intending to work with cultural heritage digitization and curation projects with an introduction to the resources, tools, and capabilities for effective program planning, development, and management.

Benefits

This course enables the attendee to:

- Appreciate program management best practices that are appropriate for cultural heritage program planning, management, and implementation.
- Gain guidance and techniques for managing projects and tracking progress, including developing:
  - a solid program management and data management plan.
  - an effective structure for task development.
  - an effective program master schedule.
- Learn about requirements and resources tracking and reporting.
- Learn about the business case for using established program planning and management techniques and best practices, and its return on investment.
- Understand cost-effective methods for determining and implementing optimal

technologies that meet cultural heritage standards for long-term digital data preservation.

Intended Audience: Cultural heritage, digitization, and curation personnel responsible for project success will benefit from the basic concepts and best practices of project management. This course is equally applicable to all project team members. There are no prerequisites except a desire to use effective program management and best practices. Participants also develop increased understanding that can help them tap multidisciplinary support from the scientific, engineering, and information technology communities. This includes becoming familiar with the vocabularies and standards necessary to address the requirements of broad governmental and external oversight and reporting.

Michael B. Toth is president of R.B. Toth Associates and honorary research associate at University College London. With more than 25 years of experience in program management, systems integration, and strategic planning, Toth has led teams of scientists, scholars, and technical experts as they help museums, libraries, archives, and other institutions make more data widely available for all. He has provided program and technical management support for numerous cultural heritage projects ranging from the Vatican Library to the Walters Art Museum. Toth studied science at Wake Forest University, where he received his degree in history.

NEW for 2016
ArchSC04: Fundamentals of Image and Video Compression

9:00 am – 12:00 pm (3 hours)
Instructor: Christoph Voges, consultant

Image and video compression methods are highly relevant for digital archiving today. The application of such techniques can significantly reduce the amount of data to be stored and thus save valuable resources in terms of storage space and costs. Accordingly, a thorough

knowledge of image and video compression methods can be of great value in practice.

Currently, there are a large variety of file formats for digital images and videos based on different compression methods, which are either "lossless" and "lossy". Lossless compression methods produce no real difference between the original and compressed versions. In contrary, in lossy compression a certain error is tolerated to allow higher compression rates. For many compression techniques, a number of parameters have to be reasonably chosen. As a consequence, when dealing with image and video data in practice, several decisions regarding file format and compression have to be made.

This course provides an in-depth overview of image and video compression methods frequently used today. Based on a description of the fundamental principles, several commonly encountered file formats (e.g., TIFF, JPEG, JPEG2000, MPEG, and H.264) and appropriate selection of parameters (e.g., compression ratios) are discussed, including reasonable choices for the image resolution. Finally, selected open source tools suitable for compressing digital still images and videos are highlighted.

Benefits

This course enables the attendee to:

- Understand the principles of modern image and video compression methods and file formats.
- Recognize the difference between lossless and lossy compression.
- Know advantages and disadvantages of certain compression techniques.
- Figure out which file formats and compression methods may be reasonable for a specific application.
- Choose suitable software tools for image and video compression.

Intended Audience: All professionals working in digital archiving, imaging science, digital humanities, and related areas who deal with image compression in practice.

Short Course Fees

If you register:	on or before March 21	after March 21
2-hour		
Member	$140	$190
Non-mem	$165	$215
Student	$60	$110
3-hour		
Member	$190	$240
Non-mem	$205	$255
Student	$85	$135

Please Note: IS&T reserves the right to cancel classes in the event of insufficient advance registration. Please indicate your interest early.

Christoph Voges has studied electrical engineering at Technische Universität Braunschweig (Germany) and University of Southampton (UK). His doctoral thesis has been on "Long-term Archiving of Digital Data on Film." Today, he is working as a consultant and as an academic lecturer; his specific research interest is digital data storage on film, including signal and image processing, as well as error correction coding. He is also a delegate at the ITG Technical Committee 3.4 "Film Technology" and the AVV Working Committee 6.3 "Data and Storage Management".

NEW for 2016
ArchSC05: Spectral Imaging — Spectral Capture and Processing
1:15 – 3:15 pm (2 hours)
Instructors: Fenella G. France and Meghan Wilson, Library of Congress

This course examines the interaction and links between non-invasive analytical scientific techniques and the cultural, societal, and provenance information contained within original sources that is not apparent without undertaking this non-invasive object archeology. Course activities include lectures to explain non-invasive imaging techniques and image data processing to better understand

the tools available for preservation. Students are introduced to the range of types of spectral imaging and processing techniques that can be undertaken to explore unknown information hidden within the original source material.

In addition to expanding knowledge about the range of information available through spectral imaging, the class provides access to two image processing software programs and trains participants how to process spectral imaging datasets through Principal Component Analysis and Pseudocolor processing to retrieve data from objects such as palimpsests, watermarks, spectral mapping to separate colorants, and spectral curve techniques for characterization of colorants, and tracking changes over time. The course also addresses cost-effective methods for implementing and assessing spectral imaging technologies and standardized spectral imaging system processes for capturing, processing, and storing spectral image information, including data and metadata, in support of scholars and heritage institutions.

Generalized instruction is combined with a case study approach that draws from a range of examples representing a wide geographic and temporal scope, and includes the digital preservation of documents, images, and objects. The approach highlight different stages of projects and the varying needs of researchers and users, from historic fragile manuscripts, maps, and palimpsests, to iconic American documents such as the drafts of the Gettysburg Address, the 1507 Waldseemüller Map, and Mayan flasks.

Register for 3 classes and take 10% off the total course registration fee. See registration form for details.

Benefits

This course enables the attendee to gain skills to focus on best practice, standardized procedures and effective digital spectral project planning, including

- Assessing imaging modalities and processing to best meet the needs of specific research.
- Integrating the priorities of scholars, scientists, and researchers in project design
- Managing and integrating data and metadata.
- Balancing schedule and cost, as well as quality, conservation, and efficiency.
- Assessing impact in relation to access for end users.

Intended Audience: This course supports a wide range of professionals who work on or are planning to work on collaborative, multidisciplinary projects that requires spectral imaging. These include preservation professionals and scholars; scientists and engineers; digital specialists; database administrators; program managers and directors; and archivists, curators, librarians and researchers.

Fenella France, chief of the Preservation Research and Testing Division at the Library of Congress, researches spectral imaging techniques and addressing integration and access between scientific and scholarly data. An international specialist on environmental deterioration to cultural objects, her focus is connecting mechanical, chemical, and optical properties from the impact of environment and treatments. Serving on standards and professional committees for cultural heritage she maintains collaborations with colleagues from academic, cultural, forensic, and federal institutions.

Meghan Wilson is an imaging specialist in the Preservation Research and Testing Division at the Library of Congress working on advanced spectral imaging and processing techniques. She has established guidelines and documentation of work processes for equipment and image quality control to assure high quality standards for technical operation of the system. She has worked internationally training in system operation, data management, and cataloging for efficient collection of data and metadata.

ArchSC06: Scanner & Camera Imaging Performance: FADGI Imaging Guidelines and Implementation
1:15 – 3:15 pm (2 hours)
Instructors: Don Williams, Image Science Associates, and Peter Burns, Burns Digital Imaging

This class furthers discussions begun in ArchSC02 on simple and achievable tools/techniques to evaluate and control imaging performance; it may, however, be taken independent of that course. Building from our discussions of background and methods in ArchSC02, we address how you can achieve your goals for meeting FADGI and Metamorfoze guideline requirements. We do this using specific and practical examples of the use of ISO standards and institutional guidelines in museum or library environments. The focus is on the selection and development of test plans, performance measurements, acceptance criteria, tests targets, and software. Suggestions and tools for maintaining good imaging performance are included.

Benefits
This course enables the attendee to:
- Understand and compare imaging standards and guidelines.
- Compare various levels of FADGI and Metamorfoze guidelines.
- Identify sources of performance variation in digital image reformatting.
- Introduce imaging quality control procedures into workflows.
- Develop test plans, and apply corrective actions for ill-behaved performance.
- Use easy and non-disruptive methods to monitor image quality.

Intended Audience: Managers, engineers, and technicians responsible for evaluating and monitoring scanner and camera performance, and emerging guidelines. This includes manufacturers, service providers, and content custodians. A working knowledge of digital scanner and camera operation and their common technologies will be assumed.

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 of digital imaging devices and imaging fidelity issues for the cultural heritage community. He has worked for a number of large cultural heritage institutes in practical implementation of image quality controls and is the prime architect for the Golden-Thread image quality evaluation tools. He has taught short courses for many years and contributes to several imaging standards activities.

Peter Burns is a consultant working in digital image evaluation, system monitoring, and image processing. He has experience in several areas of digital imaging: digital photography, mobile imaging, and cultural heritage.

ArchSC07: Digital Collection Development
1:15 – 3:15 pm (2 hours)
Instructor: John Sarnowski, ResCarta Foundation

This introductory class focuses on the use of open/free software to create, validate, index, search, display, and maintain a digital archive of various materials including photographs, oral histories, newspapers, and books. Learn how to take simple digital files and create a knowledge base of standardized archival digital objects, complete with Library of Congress metadata. Learn how to build a collection, and host it. Make your full text searchable oral histories to FADGI guidelines. Capture audio files with Audacity®, use digital cameras and scanners to create full text searchable, harvestable archives with Tomcat™, ResCarta® and ¡OAI. Bring your laptop for this hands on session. Take the free and open source tools and knowledge with you to create a growing and sustainable archive.

Benefits
This course enables the attendee to:
- Understand the types of equipment, software and time required to convert analog objects to digital.

- Identify the various types of metadata and how they can be created.
- Understand the difference between a digital file and a digital object.
- Understand the use of OCR/AAT software and its limitations
- List best practice formats for long term storage and reuse.

Intended Audience: This workshop is intended to be relevant to a wide audience, particularly to those cultural heritage professionals tasked with converting analog materials to digital.

John Sarnowski has more than 25 years' experience in building digital collections. He was responsible for creating millions of digital objects for learned societies, libraries, and major corporations as the director of Imaging Products at Northern Micrographics. Projects included "The Making of America", JSTOR, and Historic Pittsburgh. He currently is a director of the ResCarta Foundation.

NEW for 2016
ArchSC08: Automatic Cropping and Deskewing: Theory, Use, and Supportive Workflows
1:15 – 3:15 pm (2 hours)
Instructor: Doug Peterson, Cultural Heritage

Manually cropping images is labor intensive and tedious. Properly implemented, automatic cropping and deskewing can drastically reduce the time spent on this undesirable but essential task. But automatic cropping tools are not panaceas with humanlike intelligence; they are just tools with strengths and weaknesses, abilities, and limitations.

This class covers some of the theory behind automatic cropping and discusses several factors that determine the efficacy of an automatic cropping solution. We'll explore a variety of workflows and tools that ameliorate inherent limitations and challenges of automatic cropping and deskewing. For instance, we'll discuss how to use a "Temporary Contrast Prepass" to ensure accurate automatic cropping when there is limited tonal contrast between the subject and the background (e.g. white paper on a white background). As a logical extension, we discuss various ways to batch manipulate the crop of a set of images. How to produce derivatives with and without an Object Level Target or page split books is also addressed.

Benefits
This course enables the attendee to:
- Distinguish situations where automatic cropping and deskewing can be highly effective from situations where automatic cropping and deskewing is not currently possible
- Understand how an automatic cropping and deskewing algorithm detects the Region of Interest
- Modify capture workflows to facilitate effective automatic cropping and deskewing
- Identify workarounds for situations that would typically challenge automatic cropping and deskewing tools
- Leverage automatic cropping and deskewing to greatly increase total productivity

Intended Audience: This course is geared toward those responsible for digitization. It is equally helpful for those "in the trenches" of digitization and managers thereof. Basic experience with digitization workflows is important. Basic experience with Capture One Cultural Heritage 8 is helpful, but not essential. Previous experience with automatic cropping and deskewing workflows is not required; the class begins with the basics before continuing to advanced topics.

Doug Peterson is head product manager at the Digital Transitions Division of Cultural Heritage. He has helped many clients implement and refine automatic cropping and batch cropping workflows and worked closely with Phase One on their implementation of AutoCrop in Capture One Cultural Heritage 8.

NEW for 2016
ArchSC09: Four-Light Imaging
3:30 – 5:30 pm (2 hours)
Instructor: Roy S. Berns, Munsell Color Science Laboratory

Placing lights above, below, to the left, and to the right of a painting or drawing and imaging with one light at a time can be used to characterize the object's diffuse color and macrostructure (impasto), the latter defined by surface normal. These color and normal maps and knowledge of the object's material properties and gloss are used to render artwork for different lighting geometries using computer graphics software such as Autodesk Maya with the mental ray renderer. This is a computational approach to lighting where the photographer can accentuate or minimize surface properties without re-shooting, producing images appropriate for reprographics, archiving, and conservation. The system is calibrated using a cue ball, white foam core, and a color calibration target. This technique is described and demonstrated, including computer-graphics rendering.

Benefits
This course enables the attendee to:
- Use surface normal to define macrostructure.
- Estimate surface normal using photometric stereo.
- Learn about four-light imaging technique to measure diffuse color and surface normal maps.
- Understand the basics of computer graphics rendering.

Intended Audience: Museum, archive, and library studio photographers. Basic understanding of imaging paintings is assumed.

Roy S. Berns is the Richard S. Hunter Professor in color science, appearance, and technology within the program of color science at Rochester Institute of Technology, where he developed both MS and PhD programs in color science. He directs the Andrew W. Mellon Studio for Scientific Imaging and Archiving of Cultural Heritage. He has received lifetime achievement awards from the International Association of Colour, the Colour Group of Great Britain, and the Inter-Society Color Council. He is an IS&T Fellow.

ArchSC10: Introduction and Explanation of the Metamorfoze Preservation Imaging Guidelines, version 1.0, 2012
3:30 – 5:30 pm (2-hours)
Instructor: Hans van Dormolen, Hans van Dormolen Imaging & Preservation Imaging

In this course the what, why, and how of the Metamorfoze guidelines are explained. Technical criteria and tolerances are also addressed in an easy, comprehensible way.

To use the Metamorfoze guidelines in digitization projects the entire work flow has to be organized according to the specs. Scanners and cameras have to be tuned according to the specs, technical targets have to be acquired, the daily use of technical targets has to be implemented in the daily use and handling by operators and photographers. A quality management team or system has to be organized to check the digital images on a regular base. To start working according to the specs requires an investment of time and money, which is rapidly paid back by a robust, reliable, predictable, and repeatable production of digitals images. To be able to make this investment and to deal with unexpected setbacks, broad and deep support of management is needed.

Benefits
This course enables the attendee to:
- Understand the Metamorfoze Guidelines.
- Learn its criteria, tolerances, and technical test charts in an easy comprehensible way.

Intended Audience: Managers, photographers, operators and others from archives, libraries and museums who are involved in digitization projects wishing to learn more about the

Metamorfoze Preservation Imaging Guidelines and its work flow.

Hans van Dormolen is the founder of Hans van Dormolen Imaging & Preservation Imaging (HIP). He works as an imaging consultant in the cultural heritage community and at KB, 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. Hans is a member of ISO TC42 JWG26, CIE Archival Color TC08 and IS&T. He received an IS&T Service Award for his work in objective capture practices for cultural heritage imaging in 2014.

NEW for 2016
ArchSC11: Assessing Formats for Preservation
3:30 – 5:30 pm (2 hours)
Instructors: Andrea Goethals and David Ackerman, Harvard Library

This course provides attendees with an introduction to evaluating and comparing file formats for acceptance or use in preservation systems or workflows using the process used by Harvard Library to write policies for which formats are preferred and accepted in the Library's digital preservation repository—the Digital Repository Service (DRS). It introduces a format matrix tool used for the assessments, shows how it has been used to make decisions about different kinds of formats (video, word processing, CAD and video image sequence), and leads to an exercise in which all attendees get hands-on experience using the format matrix tool to assess formats for long-term preservation.

Benefits
This course enables the attendee to:
- Learn about criteria that can be used to assess and compare candidate formats for use in long-term preservation systems.
- Learn how to use the Library's matrix tool to compare formats for preservation.
- Gain experience using the Library's format matrix tool so that it can be adapted

by the attendee for additional formats or for the criteria that is most important to the attendee's institution.

Intended Audience: Managers, administrators, technicians, and others responsible for creating policies, guidelines, or specifications for file formats for long-term preservation, or that need to make decisions about formats for digitization projects when the content is intended to be usable long-term.

Andrea Goethals is responsible for providing leadership in the development and operation of Harvard's digital preservation program and for the management and oversight of the Digital Repository Service (DRS), Harvard's large scale digital preservation repository. She leads the National Digital Stewardship Residency (NDSR) Boston program, participates in the International Internet Preservation Consortium (IIPC) Preservation Working Group, and is the co-chair of the National Digital Stewardship Alliance (NDSA) Standards and Practices Working Group.

David Ackerman is the head of media preservation for the Harvard Library. Prior to that he managed Audio Preservation Services for the Harvard College Library. He co-chairs AES SC-07-01, Working Group on Audio Metadata Standards and AES TC-ARDL, Technical Committee on Archives, Digital Libraries and Restoration.

NEW for 2016
ArchSC12: Bountiful Harvest: Curation, Collection, and Use of Web Archives
3:30 – 5:30 pm (2 hours)
Instructors: Maria LaCalle and Jefferson Bailey, Internet Archive

This course introduces participants to basic web archiving concepts and challenges. The focus is on direct hands-on experience creating a collection of content archived from the web. Using the Archive-It (www.archive-it.org) web application, participants select websites for preservation, which can include their own organization's web presence, social media, digital exhibitions, blogs, news,

datasets, or other content publicly available on the web. Quality assurance, metadata, and the web archiving lifecycle, including policy decisions, is addressed. The course demonstrates ways that researchers can use web archives, as well as basic methods and tools to support data mining and other types of analysis. Participants leave the course with a searchable archive, including the option of downloading WARC (web archive files) files for long-term preservation or research
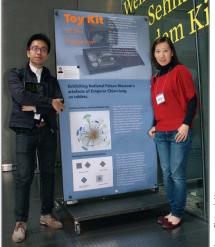
Benefits

This course enables the attendee to:

- Define web archiving terms and technologies and demonstrate the value of web archiving.
- Appraise, harvest, and curate a collection of web content for preservation and use.
- Solve basic web archiving challenges, including scoping of content to be captured, identifying crawler issues, and quality assurance.
- Explain current landscape of web archiving including recent areas of development for capture and playback and emerging community and interoperability models.
- Outline tools for research use of web archives, including data mining and datasets.

Intended Audience: Professionals responsible for digital library services, digital archives, collection management, and digital curation. No prerequisite knowledge of or experience with web archives, coding, web protocols, the WARC format, or data mining is necessary. Time is allotted to additional web archiving tools, emerging technologies, and tools supporting research and analysis.

Maria LaCalle is web archivist for partner services at Internet Archive. She provides training, support, and advocacy for web archiving related projects including work on the Archive-It service. She received an MA in history and certificate in archival management from NYU and is a certified archivist with the Academy of Certified Archivists.

Jefferson Bailey is director of web archiving programs, managing the Archive-It (IA) service, contract web archiving services, and research, grant, and education programs at Internet Archive. Prior to joining IA, he worked on strategic initiatives, digital preservation, archives, and digital collections at institutions such as the Metropolitan New York Library Council, Library of Congress, Brooklyn Public Library, and Frick Art Reference Library, and has worked in the archives at NARA, NASA, and Atlantic Records. He has taught digital preservation, numerous workshops on data mining web archives, and has an MLIS in archival studies from University of Pittsburgh.

Photo: Christoph Voges.

The Interactive Paper Session always generates much discussion and interest.

Participate in the Archiving 2016 Exhibition
Wednesday April 20 and Thursday April 21

Tabletop exhibition featuring digital archiving related products and services.

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

Technical Program*

Wednesday April 20, 2016

9:00 – 10:00 AM
WELCOME AND KEYNOTE

Session Chairs: Kari Smith, Massachusetts Institute of Technology Libraries (USA); Ulla Bøgvad Kejser, The Royal Library (Denmark); and Peter Burns, Burns Digital Imaging (USA)

Spectral Imaging of Manuscripts: Recovery of the Past and Preservation for the Future, *Roger Easton, Rochester Institute of Technology, and Keith Knox, consultant (USA)*

10:00 AM – 12:10 PM
ADVANCED IMAGING TECHNIQUES

Session Chair: Peter Burns, Burns Digital Imaging (USA)

Spectral Imaging for Preservation Documentation, *Fenella G. France, Library of Congress (USA)*

Burned Record Imaging at NARA, *Noah W. Durham, The National Archives Records Administration (USA)*

Digital Materiality with Enhanced Reflection Transformation Imaging, *Peter Fornaro, Andrea Bianco, and Lukas Rosenthaler, Universität Basel (Switzerland)*

Post Processing of Reflectance Transform Imaging for Isolation of Surface Impressions, *Kurt Heumiller, Jens Stenger, Soyeon Choi, and Chelsea Graham, Yale University (USA)*

12:10 – 12:30 PM
EXHIBITOR PROFILES

12:30 – 2:00 PM
TOPICAL DISCUSSION BROWN BAG LUNCH

Optional networking event. Lunch not provided.

2:00 – 3:10 PM
ASSET MANAGEMENT

Session Chair: Christoph Voges, consultant (Germany)

Summarization and Classification of CNN.com Articles Using the TFxIDF Family of Metrics (Focal), *Marie Vans and Steven Simske, HP Inc. (USA)*

Scalable Processing and Search in Package-based Repositories, *Sven Schlarb, Rainer Schmidt, Mihai Bartha, and Roman Karl, Austrian Institute of Technology (Austria)*

Defense Visual Information Storage Challenges and Lessons Learned, *Paul G. Robinson, Defense Media Activity (USA)*

3:10 AM – 3:40 PM
INTERACTIVE PAPER PREVIEWS

Session Chair: Kari Smith, Massachusetts Institute of Technology Libraries (USA)

Going Digital at the Wellcome Library: The Evolution of Digital Imaging and Innovation, *Danae M. Dracht, Wayne State University (USA)*

Fulfill your Digital Preservation Goals with a Budget Studio, *Yongli Zhou, Colorado State University Libraries (USA)*

Improving Brand Reputation of the DoD VI Archive, *Lisa Wesneski, Defense Imagery Management Operations Center (USA)*

A Hybrid Technique of Image Denoising Using the Curvelet Transform based Denoising Method and Two-Stage Image Denoising by PCA with Local Pixel Grouping, *Mourad Talbi and Adnen Cherif, Sciences Faculty of Tunis (Tunisia)*

Visual Information (VI) Ingest Process Improvement, *Barbara Burfeind, Defense Media Activity (USA)*

Lifecycle Management Workflow, *April Alexander, Defense Imagery Management Operations Center (USA)*

Data Reader for Write Once, Read Forever (WORF) Interference Spectra Media, *Richard J Solomon[1, 2], Eric Rosenthal[1, 3], Clark Johnson[1], Jonathan M. Smith[2], Melitte Buchman[3], William Butterfield[1], and Donald Carlin[1]; [1]Creative Technology LLC; [2]University of Pennsylvania; and [3]New York University (USA)*

*Program subject to change; see final program for exact times and paper order. Note that focal talks are 30 minutes in length; traditional papers, 20 minutes; and interactive previews 2 minutes, with discussions held during the Wednesday afternoon and Friday morning coffee breaks.

Towards Building a Framework for Access at the National Archives of Zimbabwe, *Forget Chaterera[1,2] and Patrick Ngulube[1]; [1]University of South Africa and [2]National University of Science and Technology (Zimbabwe)*

Securing Defense Visual Information in a Commercial Environment, *Juan Vargas-Matos and Paul G. Robinson, Defense Media Activity (USA)*

Archiving Email: Relevant Business Models and Drivers of Preservation, *Kristen C. Ratanatharathorn, The Andrew W. Mellon Foundation (USA)*

Digitally Archiving History: A Game Plan for Large, Unruly Archival Collections with Limited Staffing, *Virginia A. Dressler, Kent State University (USA)*

Digitizing 16mm, 35/32mm, and 35mm Optical and Magnetic Sound Elements, *Chris Reynolds, Deluxe Media, Inc. (USA)*

3:40 – 4:40 PM
INTERACTIVE PAPER SESSION I AND EXHIBITION

4:40 – 5:40 PM
PRESERVATION FORMATS AND FRAMEWORKS

Session Chair: David Walls, US Government Printing Office (USA)

Long-Term Preservation and Archival File Formats: Concepts and Solutions, *Peter Fornaro and Lukas Rosenthaler, Universität Basel (Switzerland)*

On the Potential of Film as a Digital Storage Medium, *Christoph Voges, consultant (Germany)*

The International Image Interoperability Framework and its Implication to Preservation, *Lukas Rosenthaler and Peter Fornaro, Universität Basel (Switzerland)*

6:00 – 9:00 PM
CONFERENCE RECEPTION

Hill Country Barbeque, 410 7th St NW

Thursday April 21, 2016

9:00 – 10:40 AM
WELCOME, SOCIETY AWARDS, AND IMAGING STANDARDS AND QUALITY ASSURANCE

Session Chair: Roy Berns, Munsell Color Science Lab/RIT (USA)

Recent Activities of the FADGI Still Image Working Group (Focal), *Thomas Rieger, Library of Congress (USA)*

Going Mobile: Evaluating Smartphone Capture for Collections, *Peter D. Burns, Burns Digital Imaging, and Don Williams, Image Science Associates (USA)*

Quality Assurance in Mass Digitization Projects, *Martina Hoffmann, National Library of the Netherlands (the Netherlands)*

Image Quality Analysis based on ISO 19264, *Dietmar Wueller, Image Engineering GmbH & Co. KG (Germany), and Ulla Bøgvad Kejser, The Royal Library (Denmark)*

11:20 AM – 12:40 PM
IMAGING STRATEGIES AND WORKFLOWS

Session Chair: Don Williams, Image Science Associates (USA)

Evolution of the Historical Moving Pictures Digitization Program at the National Library of Medicine, *John Rees, John Doyle, and Doron Shalvi, National Library of Medicine (USA)*

Copies and Originals, Preservation and Access: The Art of Balance in a Digital World, *Niels Bønding, Gry Vindelev Elstrøm, and Karen Williams, State and University Library (Denmark)*

Digitisation at Scale: Automating the Mass Acquisition of Digitised Content, *Dave Thompson, Wellcome Library (UK)*

Developing an Open-Source Workflow Tracking Tool for Digitization Projects, *Steffen Hankiewicz, intranda GmbH (Germany)*

2:00 – 3:10 PM
DISSEMINATION AND USE

Session Chair: Marie Vans, HP Inc. (USA)

Unlocking the Archives of Displacement and Trauma: Revealing Hidden Patterns and Exploring New Modes of Public Access through Innovative Partnerships and Infrastructure (Focal), *Diane M. Travis, Magdalena Rojas, Anuj Nimkar, Gregory Jansen, Nicholas Diakopoulos, and Richard Marciano, University of Maryland (USA)*

Unlocking the Archive: The Defense Department's Plan to Make Unreleased Audiovisual Records Public, *E. Thomas, Defense Media Activity (USA)*

Examining the Reuse of Digital Video as Qualitative Data, *Rebecca D. Frank, Kara Suzuka, and Elizabeth Yakel, University of Michigan (USA)*

3:30 – 6:00 PM
BEHIND-THE-SCENES TOURS

see page 17 for details

Friday April 22, 2016

9:00 – 10:00 AM
WELCOME AND KEYNOTE

Session Chair: Kari Smith, Massachusetts Institute of Technology Libraries (USA)

Implementing Practices that Lead to Use or Reuse of your Collections, *Emily Gore, Digital Public Library of America (USA)*

10:00 AM – 12:20 PM
METADATA STANDARDS AND IMPLEMENTATION*

Session Chair: Kari Smith, Massachusetts Institute of Technology Libraries, and Anne Mason, Library of Congress (USA)

Implementing PREMIS Version 3, *Rebecca Guenther, Rebecca Guenther Consulting (USA)*

Embedding Metadata in Large-Scale Legacy Digital Audio Collections, *Ryan Edge, Michigan State University Library (USA)*

* Another opportunity to talk with Interactive Paper presenters will occur during the middle of this session during the coffee break.

Digital Preservation of Audiovisual Materials: The State of the Art, *Edward M. Corrado, University of Alabama Libraries, and Heather Lea Moulaison, iSchool at the University of Missouri (USA)*

US Department of Defense Metadata Standards for Visual Information, *Julia Hickey, Defense Media Activity, and Thomas M. Ruyle, Defense Imagery Management Operations Center (USA)*

12:20 – 2:00 PM
TOPICAL DISCUSSION BROWN BAG LUNCH

Optional networking event. Lunch not provided.

2:00 – 3:10 PM
IMAGE COLOR SCIENCE AND ANALYSIS TOOLS

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

Image Color Correction, Validation, and Testing (Focal), *Don Williams, Image Science Associates, and Peter D. Burns, Burns Digital Imaging (USA)*

Modification of CIEDE2000 for Assessing Color Quality of Image Archives, *Roy S. Berns, Rochester Institute of Technology (USA)*

OpenDICE Software, *Lei He, Library of Congress (USA)*

3:10 – 4:10 PM
EVALUATION AND IMPACT

Session Chair: Lukas Rosenthaler, Universität Basel (Switzerland)

The Role of Digital Collections in Scholarly Communications, *Harriett Green, University of Illinois at Urbana-Champaign, and Angela Courtney, Indiana University Bloomington (USA)*

Making Digitization Count: Assessing the Value and Impact of Cultural Heritage Digitization (Focal), *Emily Frieda Shaw, The Ohio State University Libraries (USA)*

4:10 – 5:00 PM
CLOSING REMARKS, BEST INTERACTIVE PAPER AWARD, AND FAREWELL RECEPTION

Behind-the-Scenes Tours

All tours will take place Thursday afternoon. They are reserved on a first-come, first-served basis. Tour registration information and logistic details will be sent immediately following the early registration deadline to anyone registered by that date. Those who register after the early registration deadline will receive the tour registration form at that time. Please note that all tours will be within walking or public transport distance; attendees are responsible for getting themselves to the tour site.

LIBRARY OF CONGRESS
Preservation Directorate

Learn about several key digitization activities of the Preservation Directorate at the Library of Congress, including digital imaging, conservation for digitization projects, and digital reformatting. Preservation scientists, conservators, and other specialists present workflows involved in these efforts, as well as ongoing science research in non-invasive material analysis, management and access of data, and the preservation challenges of optical media and magnetic tape. A collaborative project in non-invasive imaging that enables playback of a digital image of grooved media, rather than playback of the grooved media itself by traditional stylus, is also included.

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
NARA Innovation Hub
www.archives.gov/innovation-hub/

This tour takes participants through NARA's Innovation Hub, a unique and collaborative space where individuals work on innovative projects and programs to move the agency forward. The Hub was designed to encourage staff and researchers to become more involved with NARA's mission to increase the number of records digitized, thereby strengthening the 'core' systems that serve as platforms for all online access, specifically NARA's Online Public Access catalog and Archives.gov.

The Innovation Hub is currently focused on a Citizen Scanning initiative whereby researchers use the Hub's scanners for free in exchange for helping scan files that are uploaded to the NARA catalog. In exchange, the researchers may take a copy of the scan with them. In the first three months the Hub was open, citizens scanned 15,000 pages from nearly 1,000 files to be added to the catalog.

The processes and equipment used to support these efforts, as well as workflow and supervision, will be discussed. In addition, tour participants will learn more about other Hub initiatives, such as "transcribe-a-thons", Wikipedia "edit-a-thons", and other events and meetings that work with NARA records in innovative ways.

NATIONAL GALLERY OF ART
Division of Imaging & Visual Services (DIVS)
images.nga.gov

DIVS welcomes attendees to its painting studio A. Alan Newman will begin a guided tour through the imaging facilities and then be joined by Greg Williams and Lorene Emerson in the painting studio. There they review the workflow for shooting paintings with ultra-resolution using a computer controlled SmartDrive easel to position elements of the painting for photography. A discussion follows of the Gallery's open access image repository NGA Images at images.nga.gov and demonstrates some its functionality.

Materials on the SmartDrive easel l, and our guide to reproduction for our files, will be made available. A brief overview of the next enterprise Digital Asset Management system (eDAM) is included as well as a brief tour of the imaging facilities.

Archiving 2016 Conference Registration

Prefix_____ Given name _____ Family name_____

Title/Position _____

Company _____

Street Address _____

City _____ State/Province_____

Country _____ Postal Code_____

Telephone _____ Fax _____ Email _____

Not a member? Join today and calculate all fees based on member rates. See also below for registration/membership all-in-one options.

Membership expires 12/31/16; for students, 9/30/16.

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

Select one complimentary online journal: ❏ J.Imaging Sci & Tech ❏ J.Electronic Imaging

Conference registration includes admission to all technical sessions, coffee breaks, Meet & Greet and Conference Reception, and conference proceedings. Separate registration fees are required for short courses.

1. Please check all that apply. I am a

❏ speaker ❏ session chair ❏ committee member ❏ IS&T member
❏ only taking short courses ❏ short course instructor

2. Conference Registration

Register early and save $100. After March 21, 2016 add $100 to conference registration fee noted below.
To better serve you, IS&T is offering conference registration options that include membership (new or renewal). Register for just the conference or register for the conference plus IS&T membership, with your choice of an online subscription to the *Journal of Imaging Science and Technology* (JIST) or *Journal of Electronic Imaging* (JEI).

	on or before March 21	after March 21	TOTAL
___ Member	$510	$610	$ _____
___ Non-member	$610	$710	$ _____
___ Registration with membership + JIST			
Membership begins within 2 weeks of registration and expires 12/31/16.	$610	$710	$ _____
___ Registration with membership + JEI			
Membership begins within 2 weeks of registration and expires 12/31/16.	$610	$710	$ _____
___ Student Member (ID required)	$170	$270	$ _____
___ Student registration + membership with JIST (ID required)			
Membership begins within 2 weeks of registration and expires 09/30/16.	$200	$300	$ _____
___ Student registration + membership with JEI (ID required)			
Membership begins within 2 weeks of registration and expires 09/30/16.	$200	$300	$ _____
___ Student Non-member (ID required)	$350	$450	$ _____
___ One-day: ❏ Wed ❏ Thurs ❏ Fri	$295	$295	$ _____
___ Short course only (check and proceed to short course selection area)			
		subtotal	$ _____

3. Short Course Registration (be sure to multiply number of classes by per course fee and place on total line)
Please note: Course notes for most classes are provided electronically prior to the conference for printing or viewing on your computer. Instructors without e-notes will provide hardcopies in class.

	on or before March 21	after March 21	TOTAL
3-hour Member (per class; select below)	$190	$240	$ _____
3-hour Non-member (per class; select below)	$205	$255	$ _____
3-hour Student (per class; select below)	$85	$135	$ _____

Check all that apply ❑ Arch SC01 ❑ Arch SC02 ❑ Arch SC03 ❑ Arch SC04

	on or before March 21	after March 21	TOTAL
2-hour Member (per class; select below)	$140	$190	$ _____
2-hour Non-member (per class; select below)	$165	$215	$ _____
2-hour Student (per class; select below)	$60	$110	$ _____

Check all that apply ❑ Arch SC05 ❑ Arch SC06 ❑ Arch SC07 ❑ Arch SC08
❑ Arch SC09 ❑ Arch SC10 ❑ Arch SC11 ❑ Arch SC12

OR
Take ANY three classes and receive 10% off the total price
(enter three, fill in member or non-member fee next to each, add, and multiply by .90 to get your price, representing 10% savings; add additional lines if needed; students may not take advantage of this offer)

SC____ $ _____ + SC____ $ _____ + SC____ $ _____ = $_____ x .90 = $ _____

4. Extras

___ Extra copy of conference proceedings Note: One copy comes with conference registration. $100 $ _____
___ Guest ticket for Meet and Greet and Conference Reception $85 $ _____
Name/Affiliation of Guest for badge: _____

subtotal from previous page $ _____
Wire transfer fee ($25 if applicable) $ _____
GRAND TOTAL **$ _____**

Payment Method: ❑ AmEx ❑ MasterCard ❑ VISA ❑ Discover ❑ Wire Transfer ❑ Check
Card#: _____ Exp. Date: _____
Name as it appears on card: _____
Authorization Signature: _____

Return this form with signed credit card authorization to
IS&T, 7003 Kilworth Lane, Springfield, VA 22151 or fax to 703/642-9094.
Contact registration@imaging.org for wire transfer information.
Please note: $25 must be added to the total for wire transfer payments to cover bank costs.

**Please note: To cover bank charges and processing fees, there is a cancellation fee of $75 until April 12, 2016. After that date, the cancellation fee is 50% of the total plus $75.
No refunds will be given after May 3, 2016. All requests for refund must be made in writing.**

Become part of the Archiving online community!
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