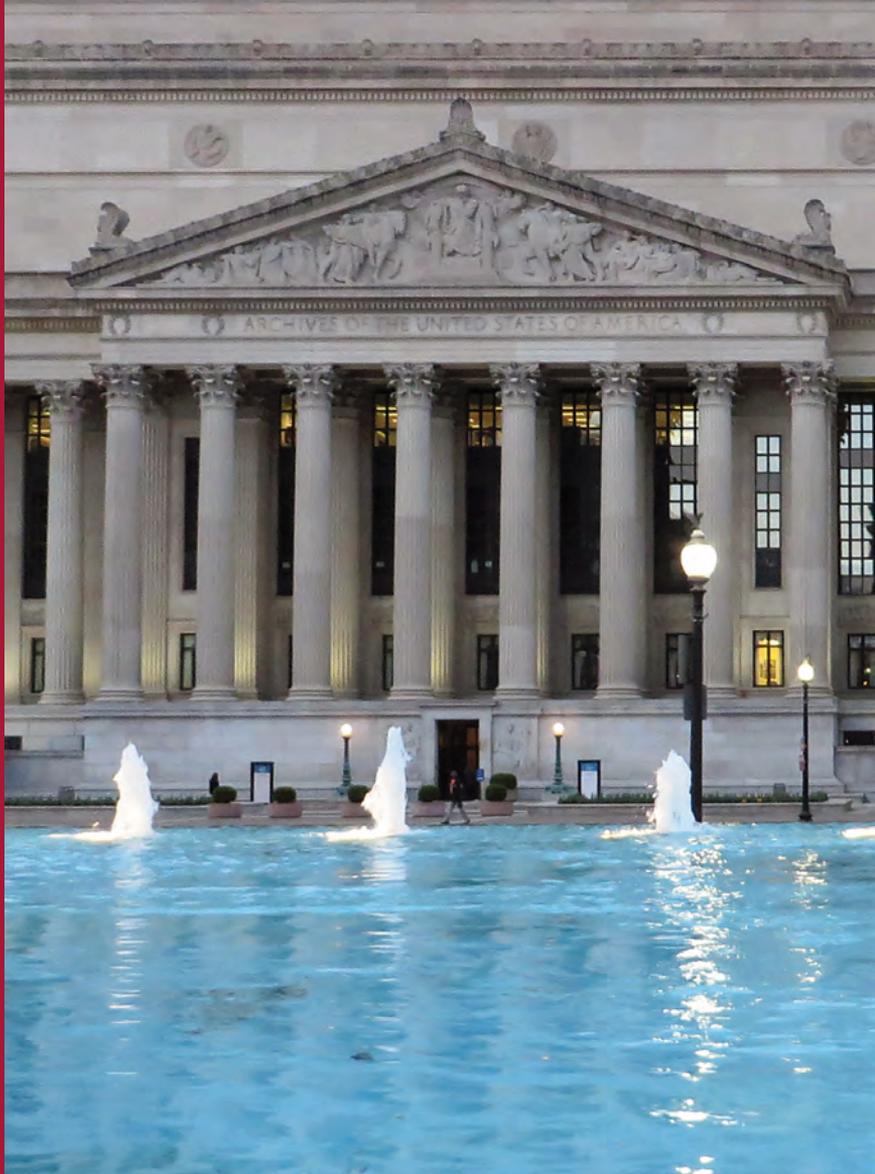


PRELIMINARY PROGRAM



ARCHIVING2020

May 18-21, 2020 • Washington, DC

Sponsored by the Society for Imaging Science and Technology

www.imaging.org/archiving



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 cultural heritage digitization, preservation, and access. The conference presents the latest research and workflows 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 2020 is a blend of short courses, keynote talks, peer-reviewed oral and interactive (poster) presentations, behind-the-scenes tours, an exhibit, and social events offering attendees a unique opportunity for gaining and exchanging knowledge and building networks among professionals.

Non-members may choose registration with membership for the same price as a non-member registration and take advantage of member short course fees. Details: page 16.



Photo: Alexandre Leão

Long coffee breaks allow time for indepth conversations, as well as learning more through the Interactive (Poster) Papers.

Cooperating Societies

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

CONFERENCE COMMITTEE

GENERAL CHAIR

Jeanine Nault, Smithsonian Institution (US)

PROGRAM CHAIR

Walther Hasselo, Heritage Leiden (the Netherlands)

SHORT COURSE CHAIRS

Steffen Hankiewicz, intranda GmbH (Germany)

Anne Mason, NARA (US)

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Alexandre Leão, Federal University of Minas Gerais (Brazil)

TECHNICAL PROGRAM COMMITTEE

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Martina Hoffmann, Martina Hoffmann Consulting (the Netherlands)

Erik Landsberg, Cultural Heritage Digitization Consulting (US)

Phil Michel, Library of Congress (US)

Christoph Voges, Hochschule für angewandte Wissenschaft und Kunst (HAWK), and consultant (Germany)

STEERING COMMITTEE

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

Peter Burns, Burns Digital Imaging (US)

Suzanne E. Grinnan, IS&T (US)

Lukas Rosenthaler, University of Basel (Switzerland)

David Walls, US Government Publishing Office (US)



CONFERENCE AT-A-GLANCE

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

REGISTRATION DESK OPEN

Monday 18 May 7:15 – 17:00
 Tuesday 19 May 8:00 – 16:00
 Wednesday 20 May 8:30 – 14:00
 Thursday 21 May 8:30 – 12:30

MONDAY 18 MAY

- 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 Welcome; location TBA

TUESDAY 19 MAY

- Opening Keynote: The Ever-changing Work that is Digital Preservation
- Exhibitor Previews
- Exhibit Open
- Interactive (Poster) Papers available to view
- Technical Papers Program
 - It's All About Preservation
 - Digitization Workflows
- Panel Discussion—From Shelf to Shutter to Sharing: Access to Collections and the Questions that Drive Digitization Decision Making
- Conference Reception; location TBA

Exhibit at Archiving 2020

Tuesday/Wednesday May 19/20
 Tabletop exhibit featuring related products and services.

Contact Donna Smith
 dsmith@imaging.org; +1-703-642-9090 x100

IMPORTANT DATES

Hotel registration deadline:
 16 April 2020

Early registration deadline:
 19 April 2020

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

WEDNESDAY 20 MAY

- Wednesday Keynote: Spectral Archives: Obstacles and Opportunities
- Exhibit Open
- Technical Papers Program
 - Interactive (Poster) Paper Previews and Session
 - Welcome to the World of 3D Management
- Behind-the-Scenes Tours; see page 16.

THURSDAY 21 MAY

- Closing Keynote: Mind the Gap: Shifting the Gender Balance Online with Cultural Collections
- Technical Papers Program
 - Advanced Imaging
 - Standards
 - Access
 - A Look at the Future: LOD & AI

CONFIRMED EXHIBITORS

as of 28 Feb 2020

Arkhenum
 ColorBurst Systems
 Creekside Digital
 The Crowley Company
 FilmFabriek
 Image Engineering

THE VENUE: NATIONAL ARCHIVES

The National Archives (NARA)—home to the US Declaration of Independence and US Constitution—hosts Archiving 2020.

Located in the heart of Washington, DC, NARA borders the National Mall, which is home to the National Gallery of Art and many of the Smithsonian Museums. Numerous cultural heritage institutions, the US Capitol, the White House, national monuments, restaurants, and Metro transit stations are

within easy walking distance. The 2020 meeting occurs during the peak of Washinton's Spring, when the city's gardens and parks come alive with blooms. The temperatures range in May is 54-76°F/12-25°C. Some rain can be expected.



ACCOMMODATION/TRANSPORTATION

Lodging Accommodation

The metro DC area can be very expensive for hotel lodging, especially in the Spring. As such, we were unable to locate a reasonable option for a group near NARA. Please explore options that fit your needs via hotels.com, airbnb, etc. For those looking for a moderately-priced hotel a 40-minute commute from NARA, a rate of \$199/night with internet and \$10/day/parking, has been secured in Silver Spring, Maryland. The hotel is located three blocks (10-minute walk) 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 **April 16, 2020**.

DoubleTree by Hilton Hotel Washington DC – Silver Spring

8727 Colesville Road
Silver Spring, Maryland 20910

Rate: \$199 + 7% occupancy and 6% state sales tax per night. *Rate honored +3 days prior to/after the conference based on availability. Be sure to check the hotel's cancellation and change policies.*

To Reserve

via Online: visit Archiving web page

via Phone: +1 800 471 6399

Reference: SF1

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 ~\$40.
- 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 Station (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.

SHORT COURSE PROGRAM: MONDAY 18 MAY

2-hour Classes 8:00 – 10:00

SC01: Scanner & Camera Imaging Performance: Ten Commandments

Time: 8:00 – 10:00 (2 hours)

Track: Standards / Best Practices

Level: Introductory

Instructors: Peter Burns and Don Williams

Benefits: This course enables the attendee to:

- Interpret and comply with customer imaging requirements.
- Establish accountability for imaging performance problems.
- Compare various levels of FADGI and Metamorfoze guidelines.
- Critically evaluate manufacturers' claims of resolution, color errors, and noise.

Course Description

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 have updated this course from a previous Top Ten Tips publication. 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 are described. More specifically, we address how to meet FADGI and Metamorfoze guideline requirements. The elements of this course can be applied by digital image service providers, collection custodians, and device manufacturers.

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.

Peter Burns is a consultant working in digital image evaluation, system monitoring, and image processing. He has experience in several areas for digital imaging, digital photography, mobile imaging, cultural heritage. He has taught short courses for many years.

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 contributes to several imaging standards activities.

NEW for 2020!

SC02: Digitization of Federal Records to Comply with the Transition to Electronic Records by 2022

Time: 8:00 – 10:00 (2 hours)

Track: e-Records Compliance

Level: Overview

Instructors: Michael Horsley and Thomas Rieger

Benefits: This course enables the attendee to:

- Understand the compliance requirements of OMB/NARA M-19-21: Transition To Electronic Records.
- Develop a digitization plan that incorporates FADGI technical guidelines and NARA records management regulations.
- Have a better understanding of how to apply quality management principles such as quality control and inspection to verify compliance.
- Learn how to interpret FADGI DICE results and how to apply process improvement.
- Gain an appreciation of the complexity involved in establishing a digitization program at scale.

Course Description

Beginning in 2022, physical permanent federal records heading to the National Archives must be in digital form and with few exceptions, the originals will be disposed. This means paper documents must be digi-

tized, a massive undertaking. NARA is writing digitization regulations that incorporate FADGI technical guidelines, as well as defining records management, quality control, and validation of digital surrogates that serve as the new records copy. Because the original records will not be retained, the specification for this is quite high, requiring rigorous application of FADGI guidelines to document mass digitization. This course provides an understanding of the new directive, guidance on what the requirement is, and suggests approaches to be taken to meet the requirement. Topics covered include the general principles federal agencies will need to cover such as records management rules/regulations/practices; project management checklists; quality management (project level); and most importantly, the validation steps that constitute when (and how) the lifecycle of the analogue to digital surrogate is established.

Intended Audience: Federal agencies that must comply with the requirement, vendors of equipment and services related to digitization of federal records, industry consultants, contracting officers, and procurement professionals.

Michael Horsley is a technical specialist in the Office of the Chief Records Officer, US National Archives and Records Administration where he is responsible for digitization and other records management regulations. Horsley serves as an agency representative to FADGI, a member of ISO TC 171, and liaison to ISO ISO/TC 42-TC 46/SC 11-TC 171 JWG 26. He has more than 25 years' experience in cultural heritage digitization at the Smithsonian Institution, Library of Congress, and the US National Archives.

Thomas Rieger is the manager of digitization services at the Library of Congress, editor of the 2016 FADGI Technical Guidelines, and a member of ISO Photography Technical Committees. He was previously director of imaging services at NEDCC, and an industry consultant.

4-hour Classes 8:00 – 12:15

SC03: Integrating Advanced Imaging and Digitization into Your Institution

Time: 8:00 – 12:15 (4 hours)

Track: Integration, Workflow, and Quality Control

Level: Introductory

Instructor: Michael B. Toth

Benefits: This course enables the attendee to:

- Understand best practices that are appropriate for advance imaging and digitization program planning, management, and implementation.
- Use best practices for managing the large amounts of data created by advanced imaging technologies.
- Learn guidance and techniques for managing projects and tracking implementation, including developing:
 - A solid program management plan.
 - An effective structure for task development.
 - An effective program master schedule.
 - Requirements and resources tracking and reporting.

Course Description

This course provides modules in digitization, planning, and management reflecting stages of advanced imaging projects, along with case studies examining imaging technology applications and challenges. It also provides high-return, low-effort best practices to implement projects immediately. The core topics of the course are:

- Tailoring Digitization and Data Management for Archiving: Identify how, why, and when different imaging technologies are most efficiently applied. How to implement best practices and technologies most appropriate to staffing, resources, and program complexity: One size does not fit all.
- The Basics of Program and Data Management: Basic concepts and planning methods for management and process improvement to implement digitization

with effective program and data management.

- Full Life Cycle Implementation: Addressing challenges in advanced imaging program and data planning, development, and management with case studies.

Participants develop increased understanding that can help them tap multidisciplinary support from the scientific, engineering, and information technology communities. The course introduces best practices for integrating advanced imaging and digitization into standardized institutional and project workflows. It focuses on methodologies for implementing and managing advanced imaging and digitization, integrating new technologies and data, and supporting advanced digital products. This includes collecting, processing, accessing, archiving, and collaborating with digital data from various imaging technologies.

Intended Audience: This course supports participants from institutions, academia, and corporate practice as they implement and manage successive stages of advanced imaging and digitization projects from initiation through production and operation, especially with changing technologies, data standards, and tighter budget environments. Archiving personnel will benefit from the basic concepts and best practices of advanced digitization and data management. This short course is equally applicable to all project team members.

Michael B. Toth, president of R.B. Toth Associates and Honorary Research Associate at the University College London, has led advanced digitization and curation projects to provide data and information for global access. With more than 30 years of experience in program management, systems integration, and planning, Toth has led teams as they help museums, libraries, archives, and other institutions make data accessible. He has provided program and technical implementation, management, and planning for numerous cultural heritage projects.

Special Notes for Short Courses

We encourage you to register for courses in advance to ensure that they run. Note that you may register for short courses only; conference registration is not required to take classes.

Take 3 classes and receive a 10% discount. See registration form for details.

Monitors needed for classes. Students can take a class for free in exchange for helping IS&T. Contact archiving@imaging.org for details.

SC04: Scientific Imaging and Metadata Management with the Digital Lab Notebook

Time: 8:00 – 12:15 (4 hours)

Track: Imaging Documentation

Level: Introductory

Instructors: Carla Schroer and Mark Mudge

Benefits: This course enables the attendee to:

- Gain a basic understanding of two widely used computational photographic imaging techniques: Reflectance Transformation Imaging (RTI) and photogrammetry for 3D applications.
- Learn about the Digital Lab Notebook (DLN), how archiving and reuse requirements are driving its adoption, and how to use it in an RTI or photogrammetry practice.
- Learn about the software tool chain for collecting and validating metadata about image sequences, computational processing and organization of data, metadata, and processed work products into internal standards-based, archival Submission Information Packets for archival deposit.
- Provide an opportunity for hands-on practice with the tools, using provided example data (participants can download the software from the CHI website prior to the course; the open-source software runs on both Mac and Windows PCs).

Course Description

Through lectures, demonstrations, discussions, and hands-on practice, this course

gives participants an understanding of software tools called the Digital Lab Notebook (DLN). The DLN serves the same function as a written scientist's lab notebook, enabling inspection, archiving, and reuse of digital representations.

The course begins with an overview of RTI and photogrammetry, including image capture basics.

The DLN software is designed for RTI, photogrammetry, multi-spectral and documentary photo sequences. It records the capture context for photographic image sequences, validates the data, reports data processing workflows and provides archival preparation and packaging of the data, finished work products and associated metadata. The archived metadata is automatically translated into CIDOC/CRM Mapped Linked Data and other widely used metadata formats.

Intended Audience: Museum, library, historic site, archive and archaeology professionals with an interest in scientific computational photography and archival and metadata practices. There are no prerequisites. Anyone from novice to expert is welcome.

Carla Schroer is a co-founder and director of Cultural Heritage Imaging (CHI) a non-profit corporation that develops and implements imaging technologies for cultural heritage and scientific research. Schroer leads the training programs at CHI, along with working on field capture projects with Reflectance Transformation Imaging and photogrammetry. She also leads CHI's software development activities. She spent 20 years in the commercial software industry, managing and directing a wide range of software development projects.

Mark Mudge is president and co-founder of Cultural Heritage Imaging. He has a BA in philosophy, worked as a professional bronze sculptor, and has worked in 3D imaging for 30 years. He is co-inventor, with Tom Malzbender, of the Highlight Reflectance Transformation Imaging technique. He serves on the International Council of Museums Documentation Committee's CRMsig (CIDOC/CRM).

2-hour Classes 10:15 – 12:15

NEW for 2020!

SC05: Extending the Digitization Platform: Visualizing Spectral and Annotated Data

Time: 10:15 – 12:15 (2 hours)

Track: Advanced Imaging

Level: Introductory

Instructors: Fenella G. France and Andrew Forsberg

Requirements: Participants need to bring personal computers to take best advantage of the course.

Benefits: This course enables the attendee to:

- Expand their data visualization capabilities through learning how to integrate and render spectral imaging as an additional collections access tool for their institution and collections. Access to spectral (multi/hyper) and scientific data has long been a challenge for cultural heritage institutions.
- Gain skills in expanding the capacities of I3F and Mirador—“widely accepted open source tools”—to focus on best practice, standardized procedures, and effective data visualization, including:
 - Hands on rendering layers of a spectral imaging dataset in I3F / Mirador (personal computer required).
 - Hands on introduction to adding curatorial or scientific data annotations.
 - Integrating priorities of scholars, curators, and researchers in digital projects.
 - Managing access to large datasets and metadata.

Course Description

Basic digitization alone does not reveal everything contained within the original material, and cannot detect, for example, erased and redacted writing or faded inks. These features are important for scholars, authentication, and collections care. A Data Visualization Project Initiative (DVP) has created a cloud-based integration of spectral and scientific data analyses linked to a visual rendering of the heritage object. This initiative uses a commonly shared international infrastructure, the International Image Interoper-

SHORT COURSES AT-A-GLANCE

Descriptions for short courses begin on page 3.

8:00 – 10:00

SC01: Scanner & Camera
Imaging Performance:
Ten Commandments

8:00 – 10:00

NEW for 2020! SC02: Digitiza-
tion of Federal Records to
Comply with the Transition to
Electronic Records by 2022

8:00 – 12:15

SC03: Integrating Advanced
Imaging and Digitization into
Your Institution

8:00 – 12:15

SC04: Scientific Imaging
and Metadata Management
with the
Digital Lab Notebook

10:15 – 12:15

NEW for 2020! SC05: Extend-
ing the Digitization Platform:
Visualizing Spectral &
Annotated Data

10:15 – 12:15

NEW for 2020!
SC06: Smithsonian
Open Source 3D Pipeline

13:30 – 15:30

SC07: Spectral Imaging and
Technical Aspects

13:30 – 15:30

SC08: Quality Assurance
Workflows for Digitization
Projects

13:30 – 17:45

NEW for 2020!
SC09: Best Practices for
Implementing a FADGI
Compliant Color
Digitization Workflow

13:30 – 17:45

NEW for 2020!
SC10:
Using Blender
(3D Modeling Software)
for Optimizing Cultural
Heritage Models

15:45 – 17:45

NEW for 2020!
SC11: PDF for Archiving:
Old and New

15:45 – 17:45

NEW for 2020!
SC12: OpenDICE for
Imaging Quality Assessment

ability Framework (IIIF), expanding access through the Mirador viewer, an open-source, web based, multi-window image viewing platform with the ability to zoom, display, compare, and annotate images.

Intended Audience: The course supports a wide range of professionals who work on or are planning to work on collaborative, multidisciplinary data visualization projects that would benefit from using linked content to add value to digitized items. These include preservation professionals and scholars; scientists and engineers; digital specialists, program managers, and directors; and archivists, curators, librarians, and researchers.

Fenella G. France, chief of the Preservation Research and Testing Division, develops non-destructive imag-

ing techniques for collections. Her focus is spectral imaging and processing techniques to increase links between scientific and scholarly data. She received her PhD from Otago University, New Zealand, and has worked internationally on many heritage projects. She serves on a range of professional committees, collaborating with colleagues from academic, cultural, forensic, and federal institutions. She is currently a distinguished presidential fellow for CLIR.

Dr. Andrew Forsberg, a preservation researcher in the Preservation Research and Testing Division at the Library of Congress, previously a CLIR/DLF/Mellon postdoctoral fellow in data curation for medieval studies, researches using internet-based technologies to improve data sharing, and collaboration between the sciences and humanities in cultural heritage institutions.

NEW for 2020!**SC06: Smithsonian Open Source 3D Pipeline****Time:** 10:15 – 12:15 (2 hours)**Track:** 3D Imaging**Level:** Introductory**Instructors:** Vince Rossi and Jon Blundell**Benefits:** This course enables the attendee to:

- Learn about Packrat, the Smithsonian's prototype 3D data management tool.
- Learn about Cook, the Smithsonian's beta 3D data automated processing tool.
- Learn about Voyager, the Smithsonian's beta 3D viewer.

Course Description

The Smithsonian is developing a suite of open source tools to produce, manage, and deliver 3D assets from the Institution's collections at an ambitious scale. The beta versions (and eventual full releases) of these tools are being made freely available as open source projects to other museums, learning institutions, and commercial entities worldwide..

This short course includes lectures, live demonstrations, and open discussions. Attendees are given an overview of the Smithsonian's 3D data management and delivery workflow, including the systems underlying metadata models. The workshop features live demonstrations of key workflow components such as ingest, automated 3D data processes, and authoring content around 3D models for web delivery. As these tools are still in active development, we look forward to an open discussion on the workflow and tools, with audience feedback encouraged.

Intended Audience: Museum, library, archive, and other professionals interested in managing and publishing 3D data. No technical skills are required, anyone from novice to expert is welcome to attend.

Vincent Rossi has a BFA in sculpture from the University of the Arts in Philadelphia and graduate level fine art study at Goldsmiths College/University of London,

UK. He is the supervisor of the Smithsonian's 3D Program which is part of the Digitization Program Office. Notable projects include 3D scanning of President Barack Obama, Apollo 11 Command Module, Armstrong's spacesuit, and the Nation's T. rex.

Jon Blundell has been working at the Smithsonian's Digitization Program Office since 2012 where he focuses on the technical challenges of the department; developing workflows and IT infrastructure to support the capture, processing, management, and public delivery of 3D data.

2-hour Classes 13:30 – 15:30**SC07: Spectral Imaging and Technical Aspects****Time:** 13:30 – 15:30 (2 hours)**Track:** Advanced Imaging**Level:** Introductory**Instructors:** Fenella G. France and Meghan Wilson**Benefits:** This course enables the attendee to:

- Expand their digitization capabilities through the integration of spectral imaging to understand whether this might be a useful tool for their institution and collections.
- Gain skills to focus on best practice, standardized procedures, and effective digital spectral project planning, including:
 - A hands-on demonstration of an integrated spectral imaging system.
 - Understanding and assessing illumination modalities (reflected, side-lighting, transmitted) to best meet the needs of specific collection materials.
 - Assessing benefits of spectral imaging in relation to specific research questions.
 - Integrating the priorities of scholars, curators, and researchers in digital projects.
 - Managing large datasets and metadata.

Course Description

This course examines the connections between non-invasive spectral imaging techniques and the cultural, societal, and provenance information contained within original

sources that is not captured in base digitization. Students are introduced to the range of types of spectral imaging that can be undertaken to explore unknown information hidden within the original source material.

Digital studies of cultural heritage collection materials are moving beyond simple RGB image capture to include multispectral imaging. These non-invasive imaging systems provide specialists and researchers with a tool that can reveal hidden information and additional useful data that enables a deeper understanding of collections. The incorporation of a multispectral imaging workflow allows recovery of erased or obscured writing, exposure of important provenance features such as watermarks, the identification of inks and colorants, and provides a means for in-depth analysis of creation techniques and material characteristics. These features are important for scholars, authentication, “fingerprinting”, and the care of collections.

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

Fenella G. France, chief of the Preservation Research and Testing Division, develops non-destructive imaging techniques for collections. Her focus is spectral imaging and processing techniques to increase links between scientific and scholarly data. She received her PhD from Otago University, New Zealand, and has worked internationally on many heritage projects. She serves on a range of professional committees, collaborating with colleagues from academic, cultural, forensic, and federal institutions. She is currently a distinguished presidential fellow for CLIR.

Meghan Wilson is a preservation science specialist in the Preservation Research and Testing Division at the

Short Course Fees

If you register:	on or before April 19	after April 19
2-hour		
Member	\$170	\$220
Non-mem	\$195	\$245
Student	\$65	\$90
4-hour		
Member	\$265	\$315
Non-mem	\$290	\$340
Student	\$90	\$115

Take 3 classes and receive 10% off the course registration fees. Use 2020Pick3 coupon code during checkout.

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

Library of Congress with a degree from the Maryland Institute College of Art. She has worked extensively on multiple spectral imaging programs around the world and specializes in operation, training, quality control, and data management of this imaging technology.

SC08: Quality Assurance Workflows for Digitization Projects

Time: 13:30 – 15:30 (2 hours)

Track: Integration, Workflow, and Quality Control

Level: Intermediate

Instructor: Martina Hoffmann

Benefits: This course enables the attendee to:

- Understand the need for a suitable QA for digitization of cultural heritage.
- Identify key questions to start a successful QA workflow.
- Define the basic ingredients for QA.
- Understand the principles of a modular QA-workflow.
- Implement the mix and match principle according to the given basic ingredients

Course Description

This is a practical course on the set up to a successful quick reliable quality assurance

workflow for (mass) digitization projects of cultural heritage. There is a presentation on the successfully implemented QA-workflow at the National Library of the Netherlands to give a hands-on example on how to do it. Building on the pillars of the mix and match principle, the basic ingredients set up a quality workflow which is: Simple — Flexible — Efficient — Modular — Low cost — Fast. Attendees learn which modules are useful and how to build the workflow around them. Practical, real production examples are discussed.

Intended Audience: Managers, program officers, project leaders, suppliers, and quality managers responsible for (mass) digitization programs. A basic knowledge of digitization projects will be assumed.

Martina Hoffmann works as a consultant for Cultural Heritage Digitization and QA Workflows. She is employed at the National Library and National Archives of the Netherlands. She has designed several quality assurance workflows for different mass digitization projects. She teaches QA workflows internationally. Her areas of expertise include image quality QA processes, metadata, and long-term preservation.

4-hour Classes 13:30 – 17:45

NEW for 2020!

SC09: Best Practices for Implementing a FADGI Compliant Color Digitization Workflow

Time: 13:30 – 17:45 (4 hours)

Track: Standards / Best Practices

Level: Introductory

Instructors: David R. Wyble and Thomas Rieger

Benefits: This course enables the attendee to:

- Understand the terminology of calibration and applications for color measurements.
- Understand the best practices for color measurements.
- Interpret measurement results, and the implications of the various parameters in CIE LAB calculations.

- Understand some of the processes of managing an array of instruments across an organization.
- Gain an understanding of the operational daily, weekly, monthly, and long term processes needed to effectively manage a digitization quality management program.
- Understand the interaction of increasing quality standards and the impact on productivity and system stability.
- Learn what is appropriate under what circumstances.
- Understand the interrelationship between reference and monitoring tools and targets.

Course Description

Cultural heritage institutions worldwide are making their treasures available on the internet for all to discover. Essential to this effort is the accuracy of the digitization in the area of color. This course covers the fundamentals of color science and their practical implementation in a FADGI imaging framework to help institutions of all sizes and capabilities achieve this goal. The guidance published by FADGI provides a roadmap to successful, quality digitization, regardless of the size of your digitization budget. This course assists in identifying the most appropriate approach for your institution, and provides practical solutions that are appropriate for programs at any level. The program includes a heavy dose of color science principals and applications, and practical information developed from years of digitization experience at the Library of Congress.

Intended Audience: Managers, engineers, and technicians working in color management and/or digitization operations. This includes manufacturers, service providers, and content custodians. Some knowledge of digital capture technologies is helpful, but not necessary.

David R. Wyble is the founder and president of Avian Rochester, and since 2010 has provided color and imaging consulting, as well as physical targets and measurements, for digitization.

Thomas Rieger is the manager of digitization services at the Library of Congress, editor of the 2016 FADGI Technical Guidelines, and a member of ISO Photography Technical Committees. Rieger was previously director of imaging services at NEDCC, and an industry consultant.

NEW for 2020!

SC10: Using Blender (3D Modeling Software) for Optimizing Cultural Heritage Models

Time: 13:30 – 17:45 (4 hours)

Track: 3D Imaging

Level: Introductory

Instructors: Charles Walbridge and Dale Utt

Pre-requisite: Participants should have some experience building their own 3D models.

Requirements: Participants should bring their own laptops with the free Blender 2.8, or later, software installed.

Benefits: This course enables the attendee to:

- Become familiar with the Blender interface.
- Learn more about the different components of cultural heritage 3D models.
- Learn the basics of importing, modifying, and exporting models with Blender.
- Learn basic lighting and rendering in Blender.
- Be exposed to the range of possible applications for Blender.

Course Description

Your 3D models of scanned cultural heritage objects need optimization before they're ready for you to share. In this four hour, hands-on course, we introduce Blender, the free and powerful 3D modeling software you can use to clean, sculpt, and otherwise refine your models. Models are provided for participants to work on, but attendees should have at least a bit of experience with 3D.

Pro-tip: Blender navigation is much easier with a three-button mouse—attendees should bring one if they can.

Intended Audience: Cultural heritage photographers.

Charles Walbridge is the lead collections photographer at the Minneapolis Institute of Art (Mia). The Mia Visual Resources studio has been scanning and sharing 3D models since 2014, and Mia's on Sketchfab at sketchfab.com/artsmia.

Dale Utt is the owner and operator of True Edge Archive, LLC, a company dedicated to the creation of 3D models for cultural heritage institutions. His most recent work has been with the digital innovation department and the chief photographer at the Cleveland Museum of Art. Together they have been developing photogrammetry techniques for traditionally difficult subjects, including glass and mirrored surfaces.

2-hour Class 15:45 – 17:45

NEW for 2020!

SC11: PDF for Archiving: Old and New

Time: 15:45 – 17:45 (2 hours)

Track: Standards / Best Practices

Level: Intermediate

Instructor: Boris Doubrov

Benefits: This course enables the attendee to:

- Understand preservation risks of the PDF format.
- Be acquainted with different international standards (PDF/A, PDF/UA, PDF/E) and their conformance levels.
- Evaluate the archival quality of a collection of PDF files using the available tools.
- Define custom preservation policies for PDF documents.
- Use PDF as a package for archiving complex data (emails, 3D models, and others).
- Be up to date with recent developments in PDF technology relevant for archiving.

Course Description

The course starts with a brief overview of the PDF format along with indication of various preservation risks. PDF/A (all parts and levels), PDF/UA, and PDF/E standards with the details on risks they mitigate are discussed. The practical part of the course includes a

short demo of how to use veraPDF to validate PDF documents different sets of requirements. Next, the course discusses how PDF can be used as a container format for other data collections with the additional workflow considerations to evaluate and manage the risks in these cases. Finally, we give an overview of recent developments in the PDF technology around the newly published PDF 2.0 standard and their potential role in archival solutions.

Intended Audience: Preservation engineers and technical managers. A basic understanding of PDF format is assumed.

Boris Doubrov is CEO of Dual Lab, which develops and supports veraPDF, the industry supported open source PDF/A validation tool. He holds PhD in both math and computer science. Doubrov has been working for 20 years in PDF technologies. He is an active participant of the ISO activity on PDF standardization and a board member of the PDF Association.

NEW for 2020!

SC12: OpenDICE for Imaging Quality Assessment

Time: 15:45 – 17:45 (2 hours)

Track: Integration, Workflow, and Quality Control

Level: Introductory

Instructor: Lei He

Benefits: This course enables the attendee to:

- Understand common imaging quality factors and the corresponding ISO standards.
- Understand the FADGI guideline for imaging quality assessment.
- Know how to install and use OpenDICE on PC and MAC.
- Case study: the application of OpenDICE results to monitor imaging device performance variations.

Course Description

The course presents OpenDICE software as an open license solution for digital imaging quality assessment. We matched the FADGI (Federal Agencies Digitization Guidelines Initiative) specifications to construct the digital

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See registration form for details.
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imaging quality assessment criteria in OpenDICE, which evaluates the image quality in three major categories: tonescale, color accuracy, and resolution analysis. The software currently supports twelve commercially available targets, and will support new targets under development. Two versions of the software were developed — one for individual image quality analysis, which offers user interaction to control the assessment criteria, and the other for batch image processing, which collects the assessment results for statistical analysis. More and more users from over ten different countries are now using OpenDICE for their digitization jobs. This course provides a comprehensive solution to address issues in using the software.

Intended Audience: Digitization or digital preservation technicians working in museums and libraries who have quality assurance needs.

Lei He is a digital imaging scientist in the Technology Policy Directorate in the Library of Congress. He received his PhD in electrical engineering from the University of Cincinnati (2003). Since then he has worked as a faculty member at Georgia Southern University for six years and was awarded tenure in 2009 as an associate professor. Before joining the library of Congress, he worked at the National Institutes of Health for two years as a visiting scholar. His research interests include digital image processing and computer vision, machine learning, and statistical analysis.

TECHNICAL PROGRAM*

TUESDAY 19 MAY

9:00 – 10:00

WELCOME / OPENING KEYNOTE

The Ever-changing Work that is Digital Preservation, *Leslie Johnston, US National Archives and Records Administration (US)*

Since the mid-1990s, digital preservation has transformed from a secondary activity at a select few cultural heritage organizations to a vital international effort with its own best practices, standards, and community. This keynote and accompanying paper discuss what digital preservation is and is not, what factors impact the scope and efficacy of digital preservation, and what strategies seem to work.

10:00 – 12:00

IT'S ALL ABOUT PRESERVATION

Towards Automated Digital Preservation through Preservation Action Registries, *Jack O'Sullivan and Jon Tilbury, Preservica Ltd. (UK)*

Tool for Archiving Social Media: Case Twitter, *Tuomo Räisänen, South-Eastern Finland University of Applied Sciences (Finland)*

Reimagining the Archival Control Model of the National Archives of Australia for the Digital Age, *Carey Garvie, National Archives of Australia (Australia)*

Waste Not, Want Not: Assessing the Environmental Sustainability of the University of Houston's Digital Preservation Program, *Bethany Scott and Diana Dulek, University of Houston Libraries (US)*

12:00 – 12:20

2-MINUTE EXHIBITOR PROFILES

12:20 – 15:35

DIGITIZATION WORKFLOWS

FOCAL TALK Automating 35mm Photographic Film Digitization: X-Y Table Capture System Design and Assessment, *Michael Bennett, University of Connecticut (US)*

Digitizing 200 Manuscripts in 200 Days at the National Library of Scotland, *Gavin Willshaw, National Library of Scotland (UK)*

When the Great is the Enemy of Good—Quality and Sustainability in Digitization, *Millard Schisler, Johns Hopkins University (Brazil)*

Improving Human-computer Interaction through Innovative Adaptation, a Case Study in End-user Development for Digitization, *Jeremy Moore and Andrew Coggins, University of Tennessee (US)*

16:15 – 17:25

PANEL DISCUSSION

From Shelf to Shutter to Sharing: Access to Collections and the Questions that Drive Digitization Decision Making

Moderated by Jeanine Nault, Smithsonian Institution (US)

Panelists from some of the best institutions in Washington, DC, discuss challenges “beyond digitization”. Topics discussed include data maintenance, access and sharing channels, how digitized collections are used, and how usage is fed back into the decision making process for future digitization, preservation, and access decisions of cultural heritage collections.

18:00 – 20:30

CONFERENCE RECEPTION

WEDNESDAY 20 MAY

9:00 – 10:10

WEDNESDAY KEYNOTE AND IS&T AWARDS

Spectral Archives: Obstacles and Opportunities, *Roy Berns, Rochester Institute of Technology (US)*

Optical radiation can be readily separated into individual wavelengths. A material's spectral properties, whether emitted, transmitted, or reflected, is fundamental, defining the material unambiguously. Artwork reproductions having the

*Program subject to change; see final program for exact times and paper order.

identical spectral properties to the original art will match the original in color under all illuminating conditions and for all observers. The reproduction's appearance mimics the original, useful for lighting decisions. The spectral data can be used for authentication, conservation treatments, and as a component of technical examination. Given the availability of spectral imaging systems and the fundamental nature and utility of spectral data, why are image archives of cultural heritage overwhelmingly RGB? Why are studio cameras only RGB? There must be obstacles preventing spectral imaging from entering the studio. What are they? Multi-spectral and hyper-spectral imaging seem exclusive to academics and conservation scientists having imaging expertise. Are there reasons why studio photographers are excluded? These and similar questions are the subject of this presentation, along with a review of the principles and applications of spectral imaging.

10:00 – 11:05

INTERACTIVE PAPER PREVIEWS AND INTERACTIVE (POSTER) PAPER SESSION

Archiving by Design at the Technical University of Delft – Together We A(r)chive More, *Esther Maes, Technical University of Delft (the Netherlands)*

Metadata Enrichment for Digital Preservation of the Next Generation Audio in Acoustic Heritage, *Begoña Sanchez-Royo, Highbury Research and Development (UK)*

Smartphone Camera and LED Flashlight for RTI – Reflectance Transformation Imaging Applied to Cultural Heritage, *Alexandre Leao and Adriano Bueno, Universidade Federal de Minas Gerais (Brazil)*

Instituto Hercule Florence: Challenges of a Brazilian Digital Library, *Francis Lee, Hercule Florence Institute (Brazil)*

To Predict the Lightfastness of Prints on Foil Applying Artificial Neural Network, *Mahasweta Mandal and Swati Bandyopadhyay, Jadavpur University (India)*

11:05 – 12:50

WELCOME TO THE WORLD OF 3D FOCAL TALK **Smithsonian Open Source 3D Pipeline,** *Vincent Rossi and Jonathan Blundell, Smithsonian Institution (US)*

Evaluating the Application of ISO 19264 Color Validation Techniques for 3D Imaging, *Chris Heins and Scott Geffert, The Metropolitan Museum of Art (US)*

FOCAL TALK Automated 3D Mass Digitization for the GLAM Sector, *Pedro Santos, Reimar Tausch, Matevz Domajnko, Martin Ritz, Martin Knuth, and Dieter Fellner, Fraunhofer Institute for Computer Graphics Research IGD (Germany)*

14:00 – 14:40

MANAGEMENT

Access to Collections: Challenges of Physical and Digital—Assessing Digitization Decisions, *Fenella France and Andrew Forsberg, Library of Congress (US)*

Expanding the Scope of Digital Collection Development for Heritage Preservation: The Case of the Odin Oyen Collection, *David Mindel, University of Wisconsin-La Crosse (US)*

15:15 – 17:30

BEHIND-THE-SCENES TOURS

see page 15 for details

THURSDAY 21 MAY

9:00 – 10:00

CLOSING KEYNOTE AND ARCHIVING AWARDS

Mind the Gap: Shifting the Gender Balance Online with Cultural Collections, *Effie Kapsalis, Smithsonian Institution Provost Office (US)*

Since the mid-1990s, digital preservation has transformed from a secondary activity at a select few cultural heritage organizations to a vital international effort with its own best practices, standards, and community. This keynote and accompanying paper discuss what digital preservation is and is not, what factors impact

the scope and efficacy of digital preservation, and what strategies seem to work.

10:00 – 11:25

ADVANCED IMAGING

Integrating Advanced Imaging of Ancient Manuscripts, Michael Toth, R.B. Toth Associates LLC; William Christens-Barry, Equipoise Imaging LLC; and Matthew Heintzelman, Columba Stewart, David Calabro, and Melissa Moreton, Hill Museum and Manuscript Library (US)

Image Quality Degradation Caused by Color Transformations in Multi-Spectral Imaging—A Practical Review, Roy Berns, Rochester Institute of Technology (US)

11:25 – 14:35

STANDARDS

Applying the Standards: A Supplier's Perspective on Quality Control in Mass Digitization, Martijn van der Kaaij, Heron Information Management LLP and Wim de Boer, Karmac Informatie & Innovatie BV (the Netherlands)

Metamorfoze: History, Development, and Application of a Name, Martina Hoffmann, Martina Hoffmann Consulting (the Netherlands)

Digitization for Everybody (Dig4E), Paul Conway, University of Michigan (US)

FOCAL TALK Refining the Theory-to-Practice Path for FADGI Still Imaging, Don Williams, Image Science Associates and Peter Burns, Burns Digital Imaging (US)

14:35 – 15:20

ACCESS

Unity based Dynamic Virtual Museum PoC, Anssi Jääskeläinen, South-Eastern Finland University of Applied Sciences (Finland)

Mapping Oral Histories: Augmenting Digital Audio Collections with GIS, Virginia Dressler, Kent State University (US)

15:50 – 16:50

A LOOK AT THE FUTURE: LOD & AI

Linked Open Data Prototype of the Historical Archive of the European Commission, Mariana Damova, Mozaika Ltd. (Bulgaria)

Artificial Intelligence for Content and Context Metadata Retrieval in Images and Image Groups, Peter Fornaro and Vera Chiquet, University of Basel (Switzerland)

Machine Learning and IIF in the Reality Check of Daily Digitization Projects using the Example of the Goobi Community, Steffen Hankiewicz, intranda GmbH (Germany)

16:50 – 17:00

CLOSING REMARKS

BEHIND-THE-SCENES TOURS

Each year, the Archiving Conference prepares a set of Behind-the-Scenes Tours at local cultural heritage institutions where participants learn about the digitization, preservation, and access processes, challenges, and successes of colleagues. All tours take place Wednesday afternoon. They are reserved on a first-come, first-served basis. Tour registration information and logistic details are sent immediately following the early registration deadline to anyone registered by that date. Those who register after the early

registration deadline receive the tour registration form at that time.

CONFIRMED TOURS

See website for updates as they become available.

- NATIONAL GALLERY OF ART (NGA)
- NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY: FAMILY HISTORY CENTER
- SMITHSONIAN MASS DIGITIZATION PROJECT

ARCHIVING 2020 CONFERENCE REGISTRATION

You may also register online at www.imaging.org/archiving

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Conference registration includes admission to all technical sessions (Tu-Th), coffee breaks (Tu-Th), Welcome Reception (M), Conference Reception (Tu), Behind-the-Scenes Tours (W), and conference proceedings. Separate registration fees are required for short courses. Regular registration offers options that include membership (new or renewal) plus an online subscription to the *Journal of Imaging Science and Technology* (JIST) or *Journal of Electronic Imaging* (JEI) for the same price as the non-member fee. Student registration includes membership and an online subscription to JIST; students defined as pursuing studies through PhD, not post-doc.

1. Conference Technical Registration

1. Please check ALL that apply. I am a: speaker session chair committee member
 IS&T member only taking short courses short course instructor

To better serve you, IS&T is offering conference registration options that include membership (new or renewal) with your choice of an online subscription to the *Journal of Imaging Science and Technology* (JIST) or *Journal of Electronic Imaging* (JEI) for the same price as the non-member fee.

	REGULAR		STUDENT	
	thru April 19	after April 19	thru April 19	after April 19
__ Conference registration: current IS&T Member	\$555	\$655	\$225	\$275
__ Conf. registration (+ new or renewing membership + JIST)*	\$680	\$780	\$225	\$275
__ Conf. registration (+ new or renewing membership + JEI)*	\$680	\$780	NA	NA
__ Conference non-member registration	\$680	\$780	\$225	\$275
__ One-day: <input type="checkbox"/> Tues <input type="checkbox"/> Wed <input type="checkbox"/> Thurs	\$305	\$355	\$150	\$200

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* Membership benefits include access to the IS&T Digital Library, an online subscription to the *Journal of Imaging Science and Technology* (JIST) or *Journal of Electronic Imaging* (JEI), *The Reporter* newsletter, conference fee discounts, and access to the member directory, among other things. Membership takes effect within two weeks of registration and expires 12/31/20. This offer may be used for renewals.

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Search LinkedIn groups for "is&t archiving group"

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2. 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 April 19	after April 19	TOTAL
4-hour Member (per class; select below)	\$265	\$315	\$ _____
4-hour Non-member (per class; select below)	\$290	\$340	\$ _____
4-hour Student (per class; select below)	\$90	\$115	\$ _____
Check all that apply <input type="checkbox"/> ArchSC03 <input type="checkbox"/> ArchSC04 <input type="checkbox"/> ArchSC09 <input type="checkbox"/> ArchSC10			
2-hour Member (per class; select below)	\$170	\$220	\$ _____
2-hour Non-member (per class; select below)	\$195	\$245	\$ _____
2-hour Student (per class; select below)	\$65	\$90	\$ _____
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OR

**Take ANY three classes and receive 10% off the total price
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3. Additional Products

___ Additional copy of conference proceedings *Note: One copy comes with conference registration.*
\$100 \$ _____

___ Additional ticket for your guest for the Welcome and Conference Receptions
 Name/Affiliation of Guest for badge: _____ \$90 \$ _____

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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
 May 1, 2020. After that date, the cancellation fee is 50% of the total plus \$75.**

No refunds will be given after May 17, 2020. All requests for refund must be made in writing.

ARCHIVING2020



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