

# PI Summit Program

*May 22-25, 2023*

David L. Lawrence Convention Center and  
Westin Convention Center Hotel  
PITTSBURGH, PA

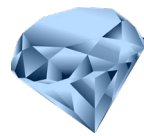




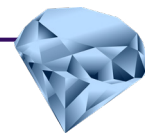
## Featured Exhibitors and Sponsors

### PI SUMMIT 2023 EXHIBITORS

We gratefully acknowledge support from all of our exhibitors



#### DIAMOND



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#### SILVER

Aiforia Technologies  
Bristol Myers Squibb  
epredia  
General Data Healthcare  
Gestalt Diagnostics  
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#### BRONZE

Aira Matrix  
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#### NON-PROFIT

College of American Pathologists (CAP)  
Association for Pathology Informatics (API)

#### EVENT SPONSORS

##### President's Reception

Aiforia  
Dell Technologies  
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##### Women's Networking Event

Dr. M.E. (Doc) de Baca (2018 API President)  
and Karen Mudd, Pride Foundation, and the  
Association for Pathology Informatics

#### MATERIAL SPONSORS

##### Registration Kiosks and Lanyards

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##### Cap Today Advertising Support

Bob McGonnagle

##### Travel Awards – Long-Standing Donors

Edward Klatt, MD  
General Data Corporation

## Table of Contents

- 4 **Welcome**
- 5 **Travel Awardees & Donors**
- 6 **Pre-Conference Bootcamp & HIMA Schedule**
- 8 **Conference Schedule: Tuesday, May 23, 2023**
- 12 **Conference Schedule: Wednesday, May 24, 2023**
- 16 **Conference Schedule: Thursday, May 25, 2023**
- 17 **Continuing Medical Education (CME)**
- 18 **Faculty Profiles**
- 28 **API Governing Council and Admin and PI Staff**
- 30 **Conference Center Map and Exhibit Hall Map**
- 32 **Upcoming API Events: DPAI 7.0 at Mayo Clinic, MN & PI Summit 2024 at Eagle Crest Resort, MI**



#### REGISTRATION HOURS (Located in the Ballroom Gallery)

Monday: 8:00 am - 5:00 pm  
Tuesday-Wednesday: 7:00 am - 5:00 pm  
Thursday: 8:00 am - 12:00 pm



#### WIFI NETWORK INFO

Username: **API2023**  
Password: **PISUMMIT23**

#### EXHIBITOR BALLROOM HOURS (Ballroom B/C):

Tuesday, May 23 (10:00 am - 7:30 pm)		Wednesday, May 24 (8:00 am - 3:30 pm)	
10:00 am - 12:00 pm	OPEN (Break 10:20-11:20)	8:00 am - 12:00 pm	OPEN (Break 10:20-11:20)
12:00 pm - 1:00 pm	LUNCH	12:00 pm - 1:00 pm	LUNCH
2:15 pm - 2:40 pm	OPEN (Beverage Break, Browse Exhibits & Posters)	3:05 pm - 3:30 pm	OPEN (Beverage Break & Browse Exhibits & Posters)
5:30 pm - 7:30 pm	<b>TASTING &amp; GAME EVENT</b>	5:30 pm - 7:00 pm	<b>PRESIDENT'S RECEPTION (Atrium)</b>



# ULYSSES BALIS, MD

CONFERENCE DIRECTOR

J. Mark Tuthill  
Conference Co-Director

Bruce A. Friedman  
Conference Committee  
Member

Nova Marie Smith  
Senior Conference Manager  
Executive Director

David McClintock  
Program Committee Chair

Lisa-Jean Clifford  
Conference Committee  
Member

Beth Gibson  
Assistant Conference Manager  
CME Coordinator

Omar Baba  
Conference Committee  
Member

Grace Chae  
Marketing and Events  
Coordinator

## Welcome to PI Summit!

The Pathology Informatics Summit 2023 is now in its 33rd year of offering, representing a conference legacy resulting from the merger of two long-standing and successful previous conference series: APIII and Lab InfoTech Summit/AIMCL. Okay, there was a physical gap due to a pandemic, but who's counting? Actually, we are! This year also marks the 40th year of there being a Pathology Informatics meeting, where experts and practitioners come together to share excellence in Pathology Informatics instruction and scholarly exchange for the specialty.

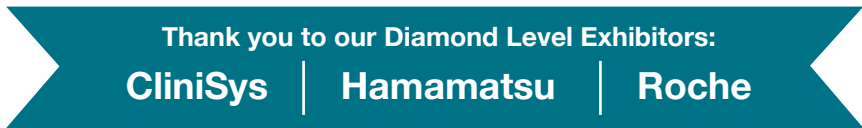
Over these four decades, we have witnessed a progressive succession of instruction topics, from fundamentals of computing and information technology to increasingly sophisticated content. The use of information technology has greatly enhanced patient safety, laboratory efficiency, as well as the diagnostic and predictive utility of laboratory data. With the continued adoption of Digital Pathology in combination with the explosive growth of machine learning, this year's meeting promises to be both stimulating and exciting. We cordially welcome you back to the Pathology Informatics Summit 2023, brought to you by the Association for Pathology Informatics.

This year's conference builds on the strong legacy of past Summits with some new features worth calling out. Continuing the tradition of hosting pre-conference activities, this year's meeting offers exciting sequences on 1) Ethics, Equity, and Regulation in Data Use, and 2) The ever-popular HIMA Imaging Science Workshop.

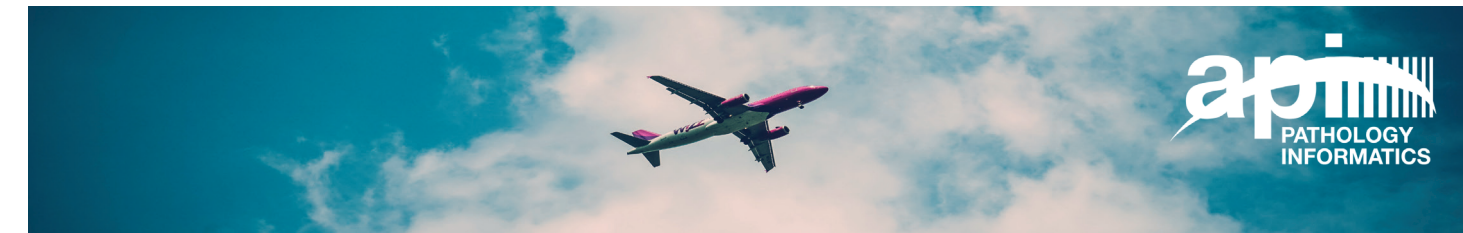
The Pathology Informatics Conference topics will include exciting and innovative informatics sessions in the following fields: Laboratory Medicine, Anatomic Pathology, Digital Imaging and Machine Vision, Molecular/Genomics, Operations, Education, AI/ Machine Learning, a historical overview of the impact of pathology informatics, AI / data-sharing ethics, and the current state of the Pathology Informatics subspecialty certification!

Finally, the meeting continues the tradition of offering parallel tracks of short lectures on timely topics in the areas of AI and Machine Learning, Operations Lab Management, Standards, Interoperability, and Reporting, as well as offering both poster sessions and short scientific oral presentations, with the best of the latter category elevated to a third track, now named as the Becich-Friedman Distinguished Oral Presentations. The meeting concludes on Thursday, with the annual API Focus Session: A Discussion on Ethical Deployment of Machine Learning /AI Tools Making Use of Patient Data. Refreshment and lunch breaks will provide you with ample time to browse the exhibitor ballroom, with displays provided by more than 20 exhibitors with IT-related products and services, allowing you to gain a host of new ideas and solutions. We are also excited to host our first-ever Beer/Wine/Cocktail and Food Tasting Event as well as hosting several high-end prize raffles for participation in a Vendor Trivia Game and for specific session attendance. Join us as we celebrate 40 dynamic years of offering Pathology Informatics content and make the vibrant pathology informatics community part of your professional life!

The Conference Planning committee and the API Governing Council is excited to welcome you back!



Warmly,



## Meet API's Travel Awardees

**Achal Acharya, MBBS**  
University Hospitals Cleveland Medical Center

**Narek Israelyan**  
Hospital of the University of Pennsylvania

**Alnoor, MD**  
University of Utah School of Medicine/ ARUP Laboratories

**Matthew Leong, MD**  
Cedars-Sinai Medical Center

**Nilay Bakoglu, MD**  
Memorial Sloan Kettering Cancer Center

**Lauren Miller, MD**  
University of Michigan

**Feifan (Fred) Chen, MD**  
Allegheny General Hospital

**Suguna Narayan, MD, PhD**  
University of Michigan

**Wikum Dinalankara, PhD**  
Weill Cornell Medical College

**Ankush Patel, MD**  
Mayo Clinic

**Amanda Dy, BEng**  
Toronto Metropolitan University

**Sulakshana Ranjan, MD**  
Baylor College of Medicine

**Mikael Haeggstroem, MD**  
Danbury Hospital

**Jenna Reece, MD, MS**  
Children's Hospital of Philadelphia

**Patricia Hernandez, MD**  
Washington University in St. Louis

**Rand Abou Shaar, MD**  
University of Pittsburgh Medical Center

## Meet API's Generous Donors

General Data  
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**DR. EDWARD  
KLATT**

**Dr. Ulysses Balis**  
Michigan Medicine

**Dr. Amrom Obstfeld**  
Children's Hospital of  
Philadelphia

**Eric Glassy**  
Affiliated Pathologists  
Medical Group

**Joseph Rudolf**  
ARUP

**Grzegorz Gurda**  
Gundersen Health System

**Dr. Enrique Terrazas**  
UCSF/Quest Diagnostics

**Dr. Ji Yeon Kim**  
Kaiser Permanente  
Southern California

**Dr. Mark Tuthill**  
Henry Ford  
Health System

**Regina Kwon**  
University of Washington

**Dennis Winsten**  
Dennis Winsten and Associates

*"I have supported the PI Summit for many years through funding for travel awardees. My grandfather always advised we should enable the next generation to become better than us. The future of API begins with those who have not only the desire but also the opportunity to participate in API events. New attendees are introduced to the invigorating environment of API for career development." - Dr. Edward Klatt*

# MONDAY PRE-CONFERENCE BOOTCAMP WORKSHOP

May 22, 2023 - Room 301/302

Time	Topic	Presenter
9:00 - 9:10	Welcome	Ronald Jackups, MD, PhD
9:10 - 9:55	Introduction to Ethics and Privacy	Michelle Stoffel, MD, PhD
9:55 - 10:40	Ethics in Research Data Use	Amrom Obstfeld, MD, PhD
10:40 - 10:55	<i>Refreshment Break</i>	<i>Outside Room 301/302</i>
10:55 - 11:40	Ethics in the Use of Artificial Intelligence	Brian Jackson, MD, MS
11:40 - 12:25	Equity in the Practice of Pathology Informatics	Vahid Azimi, MD
12:25 - 1:15	<b>LUNCH</b>	<i>Outside Room 301/302</i>
1:15 - 2:00	Data Use in the Clinical Laboratory	Samuel McCash, MD
2:00 - 2:45	Regulation of Clinical Decision Support Systems	Ronald Jackups, MD, PhD
2:45 - 3:05	<i>Refreshment Break</i>	<i>Outside Room 301/302</i>
3:05 - 3:50	Information Blocking	Simone Arvisais-Anhalt, MD
3:50 - 4:35	Data Use in Digital Pathology	Lisa-Jean Clifford
4:35 - 4:45	Conclusion	Michelle Stoffel, MD, PhD



Dr. Ronald Jackups, API  
TSE Committee Co-Chair



Dr. Michelle Stoffel, API  
TSE Committee Co-Chair

# MONDAY PRE-CONFERENCE HIMA WORKSHOP

May 22, 2023 - Room 303/304

Time	Topic	Presenter
9:00 - 9:05	Welcome	Metin Gurcan, PhD
9:05 - 9:55	Histopathology Image Analysis Challenges & Invariant Representations for Histopathology Images	Mitko Veta, PhD
9:55 - 10:45	Deep Learning for Interpreting Whole Slide Images in Digital Pathology	Cigdem Gunduz Demir, PhD
10:45 - 11:00	<i>Refreshment Break</i>	<i>Outside Room 301/302</i>
11:00 - 11:50	Explainable AI (xAI) from a Pathologist's Perspective: Let Me Explain It To You	Jeffrey Fine, MD
11:50 - 12:40	Evaluating New Technologies (Including AI) – What Makes a Good Observer Study?	Elizabeth Krupinski, PhD
12:40 - 1:15	<b>LUNCH</b>	<i>Outside Room 301/302</i>
1:15 - 2:05	Harnessing Spatial Approaches to Understand Tumor Immune Microenvironment Linked to Anti-Pd1 Treatment Response in Gastric Cancer	Tae-hyun Hwang, PhD
2:05 - 2:55	Co-Evolving Artificial Intelligence & Pathology to Decipher the Tumor Immune Ecosystem	Yin-Yin Yuan, PhD
2:55 - 3:15	<i>Refreshment Break</i>	<i>Outside Room 301/302</i>
3:15 - 4:05	Computational Optics of the Tumor Microenvironment	Kevin Eliceiri, PhD
4:05 - 5:00	Panel Discussion	



Dr. Metin Gurcan  
HIMA Planning Chair

# TUESDAY POSTERS

May 23, 2023

## Tuesday Posters Located in Exhibitor Ballroom B/C

Amanda Dy/Jennifer	An International Comparative Study of 110 Pathologists: AI Improves Accuracy for Ki-67 Assessment in Breast Cancer
Skikar Chamala	GenomeX – Advancing Genomic Data Standards and Interoperability with FHIR
Mikael Haeggstroem	Developing an Online Practice-Based Open-Access Resource of Pathology Education
Kyungmin Ko	Semi-Automated Curation Workflow for a Pediatric Molecular Pathology Interpretation Library
Ankit Singh	A Machine-Learning Web-Interface for Predicting Primary Sites in Cancers of Unknown Primary from RNAseq Data
Binna Yu	Deep-Learning-Based CAD May Be Helpful for Improvement the Concensus and Accuracy of the Diagnosis in Well-differentiated Hepatic Nodule
Kyoungbun Lee	Comparative Analysis of Pathology Workflow Efficacy and Diagnostic Accuracy After Digital Pathology Implementation
Robert Toelke	Making the Invisible Visible: BlocDoc's Impact on Prostate Needle Biopsy Histology
Devereaux Sellars	Improving Autopsy Turnaround Time Using Lean Six Sigma Principles with Define-Measure-Analyze-Improve-Control Cycles
Eric Steimetz	Deep Learning Model for Classifying Low and High-Grade Colorectal Tubular Adenomas
Regina Kwon	The Role of the Laboratory in Missed Test Results
Matthew Leong	Conversion of a Vendor-Specific to a Vendor-Neutral Quantitative Biomarker Digital Image Analysis System
Rand Abou Shaar	Augmenting Breast Pathologists Workflow Using Automated H-scores
Eric Wei	BCR Fusion Mutations in Non-CML Cases

# TUESDAY MORNING ABSTRACT PRESENTATIONS

May 23, 2023

## Short Abstract Presentations - Running Concurrently (8:00 am - 9:00 am)

### Moderator: Brian Jackson, Room 301/302

8:00-8:15	Nilay Bakoglu	Artificial Intelligence (AI)-Based Automated Determination of Histomorphological Features and Mitosis Detection
8:15-8:30	Jian Hu	Integration of Label-Free, Interpretable Image Features with Spatial Molecular Profiles from Spatial Transcriptomics
8:30-8:45	Emma Gardecki	Diversity Indexing of Intratumoral Heterogeneity of HER2-FISH Companion Diagnostics in Invasive Breast Cancer
8:45-9:00	Amanda Dy	Towards Large-Scale Adoption: Unsupervised Domain Adaptation for Ki-67 Scoring

### Moderator: Lisa-Jean Clifford, Room 303/304

8:00-8:15	Achal Acharya	Digital Whole Slide Imaging at UHCMC, From Preview to Sign Out; A CAP Guideline Based Pilot Project
8:15-8:30	Omar Baba	Qualitopix: Artificial Intelligence-Based Quantitative Quality Assurance of Immunohistochemistry Straining
8:30-8:45	Scott Robertson	Generating Labeled Whole Slide Images from the Slide Archive: A Scalable Process Using a Custom Web-Based Platform
8:45-9:00	Yukako Yagi	The Utilities of Whole Block Imaging in Pathology

### Moderator: Anil Parwani, Ballroom A

8:00-8:15	Edward Klatt	The Patient Experience with Laboratory Test Result Reporting
8:15-8:30	Nicholas Spies	Automating the Detection of Preanalytical Errors Without Expert-Curated Training Labels
8:30-8:45	Stephen Hung	PathBrowser: A Tool for Extracting Textbook Images, Captions, and Caption Terms for Flashcard-based Self-learning
8:45-9:00	Jerome Cheng	Artificial Intelligence for Human Gunshot Wound Classification

# TUESDAY MORNING SESSIONS

May 23, 2023

Morning Track Lectures - Running Concurrently (9:00 am - 12:00 pm)			
TIME	Track 1: AI & Machine Learning-AP Rooms: 301/302 Moderator: David McClintock	Track 2: Operations and Lab Management Room: Ballroom A Moderator: Ulysses Balis	Track 3: Becich-Friedman Distinguished Oral Presentations Rooms: 303/304 Moderator: Ronald Jackups
9:00 - 9:35	AI-Driven Spatial Biology as the Next NGS - The Implications on Pathology Informatics Ken Bloom, MD	Attaining Six Sigma Reliability in the Clinical Lab Charles D. Hawker, PhD	Creating a Reference Interval Database to Support Clinical AI/ML Applications with Generalizable Laboratory Phenotypes Wade Schulz, MD, PhD
9:35 - 9:45	Ten Minute Break to Switch Lectures		
9:45 - 10:20	Value of Deploying Digital Pathology & AI in Your Institution Lisa-Jean Clifford	Beyond the Turn-Around Time: Leveraging Business Analytics to Reduce Errors & Improve Efficiency J. Mark Tuthill, MD	The Serum Free Light Chain Assay is Less Sensitive for Assessing Monoclonal Gammopathies Among African American Patients Vahid Azimi, MD
10:20 - 11:20	Break, Browse Exhibits and Posters in Ballroom B/C		
11:20 - 12:00	Tips For Using Quantitative Image Analysis in Breast Pathology Practice Mustafa Yousif, MD & Liron Pantanowitz, MD, MHA, PhD	Laboratory Workflow Optimization: Can We Make Technology Do More Work? Simone Arvisais-Anhalt, MD	Impact of Clinical Decision Support Tools in the Clinical Laboratory Grace Mahowald, MD, PhD
12:00 - 1:00	Lunch for General Attendees in Ballroom B/C	Mentoring Roundtable Luncheon for Invited Mentors and Trainees in Room 306/307	

# TUESDAY AFTERNOON PLENARY SESSIONS

May 23, 2023

Ballroom A (1:00 pm - 5:30 pm)	
1:00 - 1:05	Opening Welcome to PI Summit 2023 - Ulysses G. J. Balis and J. Mark Tuthill
1:05 - 1:40	TRUU-Lab: An International Initiative for Standardizing Lab Test Names - Ila Singh, MD, PhD
1:40 - 2:15	2D Specimen Label Bar Codes for Anatomic and Clinical Pathology Come of Age: The 10+ Year Journey of CLSI's AUTO14 Label Standard - Alexis Carter, MD
2:15 - 2:40	Break/Browse Exhibits and Poster Sessions
2:40 - 3:15	UK National Health Service Initiative to Deploy Digital Pathology - Darren Treanor, MD, PhD
3:15 - 3:55	The American Board of Pathology Update on Clinical Informatics - Gary Procop, MD
3:55 - 4:00	5-minute break
4:00 - 4:30	 Hamamatsu Diamond Presentation: Hamamatsu Earns FDA Clearance for Primary Diagnoses: Unleashing the Power of Diagnostics - Key Insights from the Study - Dr. Anil Parwani All attendees for ALL Diamond Presentations will be entered into a raffle for a MacBook Air
4:30 - 5:00	 CliniSys Diamond Presentation: What's Next for Industry Standards?: An LIS Vendors View on Areas to Progress Patient Care, Interoperability, Analytics and Machine Learning in Anatomic Pathology - Chris Meyers All attendees for ALL Diamond Presentations will be entered into a raffle for a MacBook Air 
5:00 - 5:30	 Roche Diamond Presentation: Digital Innovations for Better Patient Care: Improving Care Quality, Driving Efficiencies and Reducing Costs Across the Continuum - TBD All attendees for ALL Diamond Presentations will be entered into a raffle for a MacBook Air
Exhibitor Ballroom B/C (5:30 pm - 7:30 pm)	
5:30 - 7:30	"Beer/Wine/Cocktail & Food Tasting" Event & Vendor Trivia Event in Exhibitor Ballroom B/C Top scorers of "Vendor Trivia" are entered into a raffle to win 1 of 3 Nintendo Switches! 
Room 306/307 (7:00 pm - 8:00 pm)	
7:00 - 8:00	Fellows' Meet and Greet in Room 306/307 

# WEDNESDAY POSTERS

May 24, 2023

Wednesday Posters Located in Exhibitor Ballroom B/C	
Nicholas Bateman	AI-informed Quantification of Tumor Infiltrated Lymphocytes in Histopathology Images from HGSOc Patient Tumors
Sulakshan Ranjan	Incorporating Hemovigilance Surveillance Guidelines in the Electronic Health Record for Improved Patient Care
David Ho	Kidney Tissue Segmentation to Aid in Image Analysis of Renal Cell Carcinoma and Identify Adverse Histologic Features
Kritika Prasai	PolypCheck: Utilizing BlocDoc Imaging Technology for Colorectal Polyp Quality Control
Mara Pleasure	Ischemic Stroke Etiology Classification from Clot Histology using Attention-based Multiple Instance Learning
Srikar Chamala	Automated Standards-based Genomics-EHR Integration: A pilot Implementation
Ankit Singh	A Web-Interface for Automated Annotation of Break-Apart Interphase Fluorescent In Situ Hybridization Nomenclature
Ekaterina Redekop	Morphology Preserving Alignment of Histology Images for Volumetric Analysis
Zichen Wang	Deep Learning for Tumor-associated Stroma Identification in Prostate Radical Prostatectomy Histopathology Slides
Carlos Olivares	Masked Autoencoder Pre-training for Prostate Cancer Detection
Ursula Green	Establishing a Data Model for a Human Trigeminal Ganglia Tissue Biobank
Ankush Patel	The Clinical Potential of Pathology Perspectives for Multi-omics Cancer Classification
Yonah Ziemba	Most Common Mistakes in Data Visualization
Chancey Christenson	From Manual to Efficient: The Impact of Epic on Blood Bank Operations

# WEDNESDAY MORNING ABSTRACT PRESENTATIONS

May 24, 2023

Short Abstract Presentations - Running Concurrently (8:00 am - 9:00 am)		
<b>Moderator: Jeffrey Fine, Room 301/302</b>		
8:00-8:15	Wikum Dinalankara	Comparison of Machine Learning Methods for Detection and Classification of B-cell Neoplasms from Flow Cytometry Data
8:15-8:30	Mark Zaidi	At the intersection of Pathology and Artificial intelligence: A Pathologist-in-the-Loop Approach Towards Multiomics
8:30-8:45	Trevor McKee	Development of an Objective Framework to Optimize Single-cell Segmentation Accuracy for Multiplexed Tissue Cytometry
8:45-9:00	Chancey Christenson	A Conversation with ChatGPT About the Role of Text-Based Artificial Intelligence in Pathology
<b>Moderator: Amrom Obstfeld, Room 303/304</b>		
8:00-8:15	Suguna Narayan	A Model System for Bridging Legacy Computational Pipeline Architecture to Contemporary Best Practices in Molecular Pathology Laboratories
8:15-8:30	Kyungmin Ko	Potential Implications of Patient Identifier Changes to Secondary Use of Health Data
8:30-8:45	Eric Daley	Vendor Implementation Collaboration (VIC): Development of a Program to Improve Consistency in Cancer Reporting
8:45-9:00	Yonah Ziemba	Lessons Learned from LOINC Implementation at a Large Healthcare System
<b>Moderator: Michelle Stoffel, Ballroom A</b>		
8:00-8:15	Jenna Reece	The Massive Transfusion Protocol: Challenges in Clinical Decision Support for Transfusion Medicine
8:15-8:30	Lauren Miller	Decision Support Interventions and Novel Metrics for Laboratory Stewardship of Thyroid Testing
8:30-8:45	Eric Wei	A Dive into Pathology Informatics- Patient Blood Management
8:45-9:00	Patricia Hernandez	Eplets Coverage on Commercial Solid-Phase Immunoassays for Anti-HLA Antibody Screen

# WEDNESDAY MORNING SESSIONS

May 24, 2023

Morning Track Lectures - Running Concurrently, 9:00 am - 12:00 pm			
TIME	Track 1: Artificial Intelligence and Machine Learning - CP Rooms: 301/302 Moderator: Brian Jackson	Track 2: Standards, Interoperability and Reporting Room: Ballroom A Moderator: Alexis Carter	Track 3: Becich-Friedman Distinguished Oral Presentations Rooms: 303/304 Moderator: Lisa-Jean Clifford
9:00-9:35	<b>Performance Monitoring of AI/ML Models Grounded in a Robust Statistical Framework and Conventional Laboratory Practices</b> Jansen Seheult, MD	<b>Feasibility of Direct Integration of Genomic Test Results into CAP Cancer Synoptic Reporting Protocol</b> Keren Hulkower, PhD	<b>For Now &amp; Later: Implementing a Large-Scale Clinical Workflow While Building Business Case for Future Research Endeavors</b> Sunil Singhal, MD
9:35-9:45	Ten Minute Break to Switch Lectures		
9:45-10:20	<b>Engineering Fair ML Algorithms for Laboratory Medicine</b> Mark Zaydman, MD	<b>Connecting the Dots: Creating Efficient and Effective Laboratory Networks</b> Aaron Green, PhD	<b>An Informatics-Based Biobanking Solution for Easy Navigation, Annotation, Analysis and Sharing of Biospecimens</b> Anil Parwani, MD, PhD, MBA
10:20-11:20	Break, Browse Exhibits and Posters in Ballroom B/C		
11:20-12:00	<b>A Pathologist's Roadmap For Successful Computational Pathology Collaborations</b> Drew Williamson, MD	<b>A Vision for the Future for Deploying the Auto-14 Standard</b> Ulysses Balis, MD	<b>Integrating Artificial Intelligence Platforms into Clinical Signout at a Large Academic Medical Center</b> Luke Geneslaw
12:00-1:00	Lunch for Attendees in Ballroom B/C		Travel Awardee Luncheon in Room 306/307

# WEDNESDAY AFTERNOON SESSIONS

May 24, 2023

Afternoon Track Lectures - Running Concurrently, 1:00 pm - 3:05 pm			
TIME	Track 1: Digital Pathology Rooms: 301/302 Moderator: Ulysses Balis	Track 2: LIS Development, Stewardship, and Lifecycle Management Room: Ballroom A Moderator: Michelle Stoffel	Track 3: Becich-Friedman Distinguished Oral Presentations Rooms: 303/304 Moderator: J. Mark Tuthill
1:00-1:35	<b>Digital Pathology at MSKCC: Operation Optimization for Quality and Productivity</b> Orly Ardon, PhD, MBA	<b>The Evolution of Anatomic Pathology Information Systems 1960's To 2020's</b> Dennis Winsten & Raymond Aller, MD	<b>Error Analysis in Automated Flow Cytometric Diagnosis</b> Alnoor, MD
1:35-1:45	Ten Minute Break to Switch Lectures		
1:45-2:20	<b>Remote Frozen Sections: Mission Possible for Every Pathology Laboratory</b> Adela Cimic, MD and Mike Isaacs	<b>End-of-Life Planning for the LIS: Data Archiving</b> Michelle Stoffel, MD, PhD	<b>Development of a Natural Language Processing Workflow for Annotating Clinical Hemepath Reports for Myeloid Neoplasms</b> Sophie Rand
2:20-2:30	Ten Minute Break to Switch Lectures		
2:30-3:05	<b>The Road Less Traveled - Adventures in Digital Pathology</b> Sam Terese	<b>Wielding the Double-Edged Sword Safely: An Analysis of Application Development in the Clinical Laboratory</b> Patrick Mathias, MD, PhD	<b>Metastatic Risk Prediction of Clear Cell Renal Carcinoma (ccRCC) by Computer-Assisted Analysis of Histopathology Images</b> Beatrice Knudsen, MD, PhD
3:05-3:30	Break, Browse Exhibits and Posters in Ballroom B/C		
3:30-4:00	Contemporary Topics in PI: Open Mic Session Featuring CAP Today's Bob McGonnagle as Emcee - Ballroom A		
4:00-5:30	API President's Welcome - Ballroom A		
	 <p><b>President's Reception Sponsor Talks - Ballroom A</b>                      Aiforia: "Aiforia Cloud: From Digital Pathology to Automated and Quantitative Image Analysis" - Dr. Alireza Samiei                      Pramana: "Technology Advancements that Aid in Computational Pathology" - Prasanth Perugupalli                      Dell Technologies: "Global Business Lead-Healthcare UDS &amp; CTO-Digital Pathology" - Michael Valante                      (All attendees are entered into a raffle to win 1 of 2 Amazon Echo Shows)</p>		
5:30-7:00	API President's Reception in the East Atrium - Open to all attendees and exhibitors Barbecue Dinner - come mingle and make those final connections!		
7:30-9:00	API Women's Networking Nightcap at the Westin, Pennsylvania West Room		



# THURSDAY MORNING SESSION

May 25, 2023

**Path Informatics Timely Topics Panel Discussion Series:  
A Discussion on Ethical Deployment of Machine Learning /AI Tools Making Use of Patient Data**  
Moderators: Ulysses Balis and J. Mark Tuthill  
Room 303/304, 8:00 am - 12:00 pm

8:00 - 9:00	API Council Breakfast Meeting (Closed) - Room 306/307
8:00 - 9:00	Breakfast outside 303/304
9:00 - 9:20	<b>Ethical Development, Translation, and Deployment of Clinical AI Models: A General Framework for Pathology and Laboratory Medicine</b> - David McClintock, MD
9:20 - 9:40	<b>The Rapidly Changing Reality of AI and Machine Learning as Ethically Applied to Molecular Diagnostics Reporting</b> - Alexis Carter, MD
9:40 - 10:00	<b>Rational and Ethical Deployment of AI in a Reference Lab Setting</b> - Brian Jackson, MD, MS
10:00 - 10:20	<b>Ethical Development and Deployment of AI-Based Clinical Decision Support</b> - Ronald Jackups, MD, PhD
10:20 - 10:30	STANDING BREAK
10:30 - 11:50	<b>Panel Discussion</b> Alexis Carter, Brian Jackson, Ronald Jackups, and David McClintock
11:50 - 12:00	<b>Closing Remarks and Adjournment:</b> Ulysses Balis and J. Mark Tuthill



Dr. Ulysses Balis,  
PI Summit Conference  
Director



Dr. Mark Tuthill,  
PI Summit Conference  
Co-Director

# PI SUMMIT 2023 CME ACCREDITATION

## ACCREDITATION AND CREDIT DESIGNATION



This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of Michigan Medical School and Association for Pathology Informatics (API). The University of Michigan Medical School is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The University of Michigan Medical School designates this live activity for a maximum of **20.5 AMA PRA Category 1 Credit(s)**.™ Physicians should claim only the credit commensurate with the extent of their participation in the activity.

## OBJECTIVES

- Define the rapidly evolving field of Digital Pathology and showcase associated opportunities for an expedited adoption of new workflow models leveraging machine learning, artificial intelligence, and hardware solutions
- Understand and learn tenants of business analytics, machine learning and computational pathology
- Understand the various software and hardware products available in the clinical laboratory and pathology market by interacting with many exhibitors
- Understand the requirements to deploy informatics solutions in the clinical diagnostic laboratory
- Present new research in pathology informatics based on submitted competitive scientific abstracts
- Provide a forum for basic pathology informatics instruction for house officers and fellows in pathology training programs.
- Provide updated best practices in the rapidly evolving area of digital pathology primary diagnosis

## EVALUATION AND CERTIFICATE

**ATTENDANCE MUST BE REGISTERED WITHIN 6 MONTHS TO BE AWARDED CREDIT.** Please complete the following steps to fill out the course evaluation and print your certificate:

- Login to your account at MiCME at <http://micme.medicine.umich.edu/>
- Don't have an account? Click on the 'Login or Create a MiCME Account' link at the top of the page and follow the instructions.
  - Note: You must have a MiCME account to claim credit for any University of Michigan Medical School (UMMS) CME activity
- On the Credit Center card on your Dashboard, click on Claim Credits and View Certificates. Locate the activity in the Activities Available for Credit Claiming section.
- Under Action, click on Claim.
- Under Action, click on Add Credit.
- Enter the number of credits you're claiming and the "I attest" button. (Note: This number should reflect credits claimed for the entire course, not just a single day.)
- Complete the evaluation form to provide feedback on the activity.
- Click the Submit button.
- Scroll down to the Awarded Credits section to view or print your certificate and/or comprehensive University of Michigan CME transcript.

CME CREDITS  
AVAILABLE

20.5

DEADLINE TO  
APPLY

November 22,  
2023

CONTACT:  
BETH GIBSON

[bethgibs@med.umich.edu](mailto:bethgibs@med.umich.edu)

For more information about this activity, contact Beth Gibson or visit [www.micme.medicine.umich.edu](http://www.micme.medicine.umich.edu).



# Faculty Profiles

## PI SUMMIT 2023



### Raymond D. Aller, MD

Contributing Editor, CAP Today  
raller@usc.edu

Dr. Aller graduated from UCLA and Harvard Medical School (Cum Laude, 1976). His MD thesis (MGH Caper) was the design precursor to CoPath. After UCSF residency, he practiced clinical pathology and informatics in Santa Barbara, Long Beach, University of Utah/ARUP, and MDS Lab Services. He co-authored with Dr. Frank Elevitch The ABCs of LIS, the definitive tutorial on clinical laboratory information systems. The informatics chapters of Henry's Clinical Diagnosis (with Dr. Ul Balis) long served as standard text. His courses on clinical and AP information systems have been presented at dozens of national meetings (CAP, ASCP, AACC, CLMA, HIMSS, AMIA, AABB, and others). In 1991, he helped launch the American Board of Pathology proposal to create Clinical Informatics as a subspecialty of the American Board of Pathology open to all ABMS-certified specialists. With the collaboration of other medical specialties, subspecialty certifications began in 2013. Dr. Aller provided consulting services to health care systems and vendors, including a brief period as a senior consultant with Dennis Winsten and Associates. From 2003 until 2010, he directed Bioterrorism Preparedness and Response at LA County Public Health ACD. Dr. Aller received the 2005 Honorary Fellow/Lifetime Achievement Award of the Association for Pathology Informatics, and in 2012 served as President of the API. Throughout his career, he served as voluntary faculty in USC pathology, retiring in 2016. Since 1987, Dr. Aller has been editor of "CAP Today"'s Newsbytes and Information System Surveys, now with co-editor Dennis Winsten.

### Orly Ardon, PhD, MBA

Director, Digital Pathology Operations  
Department of Pathology, Memorial Sloan  
Kettering Cancer Center  
ardono@mskcc.org

Orly Ardon is the Scientific Manager for Digital Pathology Diagnostics at Memorial Sloan Kettering Cancer Center's Pathology Department. She moved to NYC from ARUP Laboratories in Utah where she was heading the development of novel computer assisted diagnostic tools and the expansion of digital pathology collaborative initiatives. Soon after joining MSK in February 2020, Orly led the digital scanning operations effort to allow remote digital signout. She is now leading multiple pathology initiatives to increase the use of digital imaging for improved patient care. Orly has BS, MS, and Ph.D. degrees in Microbiology from the Hebrew University of Jerusalem, and postdoctoral training in cell biology and virology at the University of Utah. She also has an Executive MBA from the University of Utah. She is interested in digital pathology, artificial intelligence, and machine learning-based testing innovation.



### Simone Arvisais-Anhalt, MD

Director of Laboratory Medicine Informatics,  
Department of Pathology, University of California,  
San Francisco  
simone.arvisais-anhalt@ucsf.edu

Simone Arvisais-Anhalt, MD is the director of Laboratory Medicine Informatics, Send Out Testing, and Specimen Processing at the University of California San Francisco. Her interests include operationalizing digital health tools in health care systems, clinical informatics, clinical chemistry, laboratory medicine, and health IT policy.

### Vahid Azimi, MD

Resident, Clinical Pathology, Washington  
University School of Medicine, St. Louis  
a.vahid@wustl.edu

Vahid Azimi, MD is a 3rd-year clinical pathology resident at Washington University School of Medicine. His interests include clinical informatics and promoting population health and health equity through laboratory testing and the application of geospatial and data science tools to clinical and laboratory data.



### Ulysses J. Balis, MD

Director, Division of Pathology Informatics &  
Professor of Pathology Director, Pathology  
Informatics Fellowship Program University of  
Michigan Health System  
ulysses@med.umich.edu

Dr. Balis (PI2023 Conference Director) currently serves as the A. James French Professor of Pathology Informatics at the University of Michigan health system. Additionally, he holds institutional positions, including Associate Chief Medical Information Officer and Director of the Division of Pathology Informatics. As an elected Fellow of the American Institute for Medical and Biological Engineering (AIMBE), he has maintained longstanding interest in the intersection of engineering, high-performance computation, and the practice of medicine. The U-M Pathology Informatics Division is noteworthy for being one of the few such academic information technology groups operating in support of pathology while also being wholly housed within its host pathology department and not in a central IT division. Dr. Balis has active NIH-supported research initiatives in several areas of pathology and medical informatics, including the NIH-NIDDK Kidney Precision Medicine Project (KPMP) and an NIDDK RC2-based grant entitled the Development of 21st Century Concepts in Urology, with these projects allowing for the application of many informatics concepts towards contemporary challenges in Pathology, including machine learning, image-based analytics, and machine vision tools for histopathology. He also serves as director of the U-M Pathology Informatics Fellowship – one of only ten such two-year programs in the U.S. Similarly, he has maintained a longstanding interest in pathology informatics education, with him currently serving as the co-chair of the Longitudinal Assessment Program (LAP) of the Clinical Informatics Subspecialty Boards Exam Committee. Dr. Balis is the author of over 150 publications, many image-based algorithms, multiple patents, numerous books and book chapters, and is co-editor of one of the contemporary reference textbooks on the topic of Pathology Informatics (along with Drs. Mark Tuthill and Liron Pantanowitz). He has delivered over 300 invited presentations, nationally and internationally, on various topics related to pathology informatics, data analytics, and image analysis.



## Kenneth Bloom, MD, FCAP

Head of Pathology, Nucleai  
[ken.bloom@nucleai.ai](mailto:ken.bloom@nucleai.ai)

Kenneth J Bloom, MD, FCAP is the Head of Pathology at Nucleai. He brings more than 35 years of clinical experience in pathology, oncology, telemedicine, and bioinformatics. Dr. Bloom has held a myriad of leadership positions including President and Head of Oncology & Immunotherapy for Human Longevity Inc., Chief Medical Officer for In Vitro Diagnostics at GE Healthcare, and Chief Medical Officer of Clariant. Prior to his industry experience, Dr. Bloom spent 15 years at Rush Medical Center holding various appointed positions including Director of Laboratory Operations, Director of Immunohistochemistry and Chief Information Officer of the Rush Cancer Institute. Dr. Bloom has been the principle investigator of more than a dozen clinical trials and has served as an advisor to numerous Pharmaceutical and Bio-Technology Companies. He received his M.D. from Rush Medical College and his B.A. from Grinnell College.



## Alexis B. Carter, MD

Physician Informaticist, Department of Pathology and Laboratory Medicine, Children's Healthcare of Atlanta  
[alexis.carter@choa.org](mailto:alexis.carter@choa.org)

Alexis Carter, MD, is a Physician Informaticist for the Laboratory at Children's Healthcare of Atlanta and an Adjunct Associate Professor within the Department of Pathology and Laboratory Medicine at Emory University. Dr. Carter is teaching faculty for the Clinical Informatics Board Review Course for physicians presented by the American Medical Informatics Association (AMIA). She is the current Secretary/Treasurer for the Association of Molecular Pathology (AMP) as well as the chair of the AMP Electronic Health Records and Genomics Working Group. She is the current Secretary for the Clinical and Laboratory Standards Institute document development committee for two-dimensional barcoding for both clinical and anatomic pathology laboratory specimens. She was the senior author for the guideline on validation of next-generation sequencing bioinformatics pipelines from AMP, the College of American Pathologists (CAP), and AMIA. Dr. Carter is the Vice-Chair of the CAP Informatics Committee and helped develop the original validation guideline for Whole Slide Imaging. She is a former chair of the International Pathology and Laboratory Medicine Special Interest Group for SNOMED-CT International, a former president of the Association of Pathology Informatics and was the inaugural and reelected chair of the Informatics Subdivision of AMP. She is an Associate Editor of the Journal of Molecular Diagnostics, an Associate Editor for Administrative and Regulatory Affairs for Archives of Pathology and Laboratory Medicine, an editorial board member of the Journal of Pathology Informatics, and a reviewer for multiple scientific journals in molecular diagnostics, genetics and informatics. She is board certified in clinical informatics, molecular genetic pathology, anatomic pathology and clinical pathology.



## Adela Cimic, MD

Assistant Professor, Pathology and Cell Biology, Columbia University Medical Center  
[ac4620@cumc.columbia.edu](mailto:ac4620@cumc.columbia.edu)

Dr. Cimic is an Assistant Professor of Pathology and Cell Biology at Columbia University Irving Medical Center. I finished residency training at Wake Forest Baptist Health in North Carolina with fellowships at Weil Cornell Medicine, NY. My pathology interests are gynecologic pathology and cytopathology. However, I have been interested in developing better workflows in the pathology laboratory and telepathology solutions for many years. I started from scratch when I was appointed a project manager to implement remote frozen sections workflow at our laboratory. I believe my experience is similar to many laboratories dealing with the problem of multiple sites with low frozen section volume. Therefore, I want to share my experience and lessons learned during this time.



## Lisa-Jean Clifford

COO and Chief Strategy Officer, Gestalt Diagnostics  
[ljclifford@gestaltiagnostics.com](mailto:ljclifford@gestaltiagnostics.com)

Ms. Clifford is currently the COO and Chief Strategy Officer of Gestalt Diagnostics and has over twenty years of experience in healthcare and laboratory technology with fifteen years of experience in digital pathology. Her roles include over eleven years as the CEO of an LIS company, with other senior level roles in product and organizational strategy, corporate operations, marketing, business development, digital pathology and product management. She has worked at leading healthcare solution vendors including McKesson and IDX (GE Healthcare), and has held executive level positions as Vice President of Global Marketing at International Data Group (IDG) and Operations at eBusiness Technologies. Ms. Clifford is widely published in business and industry trade publications; has authored a book on XML; and frequently presents educational and thought leadership sessions at healthcare industry conferences focused on technology.



## Kevin Eliceiri, PhD

Walter H. Helmerich Research Chair and Professor Medical Physics and Biomedical Engineering University of Wisconsin, Madison  
[eliceiri@wisc.edu](mailto:eliceiri@wisc.edu)

Dr. Kevin Eliceiri is the Walter H. Helmerich Research Chair and Professor of Medical Physics and Biomedical Engineering at the University of Wisconsin at Madison. He is an Investigator in the Morgridge Institute for Research and member of the Carbone Cancer Center and McPherson Eye Research Institute. He is director of the Center for Quantitative Cell Imaging dedicated to the development and application of optical and computational technologies for cell studies. The Eliceiri lab is the lead developer of several open source imaging packages including FIJI and ImageJ. His instrumentation efforts involve novel forms of polarization, laser scanning and multiscale imaging. Dr. Eliceiri has authored more than 250 scientific papers on various aspects of optical imaging, image analysis, cancer and live cell imaging.



## Jeffrey Fine, MD

Associate Professor, Faculty Clinician University of Pittsburgh (Magee-Womens Hospital)  
[finej@upmc.edu](mailto:finej@upmc.edu)

Dr. Fine is a breast and gynecologic pathologist at the University of Pittsburgh with a research interest in computational pathology. Using a framework called "computer assisted diagnosis for pathologists" (pCAD), he is working to improve pathology practice through enhanced automation and improved workflow. Dr. Fine is also working toward next-generation "precision pathology" that uses computational tools to incorporate advanced analytics, biomarkers and other information modalities into diagnosis in an effort to improve pathology's ability to predict, prognosticate, and to triage patients. Finally, Dr. Fine is the director of the Pathology Informatics Fellowship at UPMC.



## Aaron Green, PhD

General Manager, North America Labgnostic, Inc.  
[aaron@labgnostic.com](mailto:aaron@labgnostic.com)

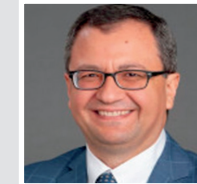
Aaron graduated with a PhD in organic chemistry from UCLA. Prior to joining Labgnostic, he was the first hire at NovaSignal, a Los Angeles based medical device startup pioneering the clinical application of autonomous robotic ultrasound, where he held executive roles in finance, sales and marketing. Aaron currently serves as General Manager, North America for Labgnostic.



## Cigdem Gunduz Demir, PhD

Professor of Computer Engineering & Deputy Director, Center of Artificial Intelligence, Koç University, Turkey  
[cgunduz@ku.edu.tr](mailto:cgunduz@ku.edu.tr)

Cigdem Gunduz Demir received her B.S. and M.S. degrees in computer engineering from Bogazici University in 1999 and 2001, respectively, and her Ph.D. degree in computer science from Rensselaer Polytechnic Institute in 2005. She is currently a Professor of Computer Engineering at the Department of Computer Engineering and School of Medicine, and also the Deputy Director of the Center of Artificial Intelligence at Koc University. Before joining Koc University, she was working as a faculty member at the Computer Engineering Department at Bilkent University. She was a visiting professor at Nanyang Technological University NTU, Singapore, in Fall 2009, and Stanford University in Spring 2013. Her main research interests and projects include development of new computational methods based on deep learning and computer vision for medical image analysis. Currently, her research group works on the interdisciplinary projects in collaborations with the Departments of Pathology and Biology for the microscopic analysis of histopathological images and in vitro fluorescence and live cell images and with the Departments of Radiology, Radiation Oncology, and Ophthalmology for the analysis of images acquired with in vivo imaging of CT, MR, and OCT. She is a recipient of Distinguished Young Scientist of the Turkish Academy of Sciences and CAREER Award of the National Scientific and Technological Research Council of Turkey. She is appointed as a member of the Artificial Intelligence Science Board of the National Health Institute of Turkey.



## Metin Gurcan, PhD

Director, Center for Biomedical Informatics; Professor, Department of Internal Medicine; Biomedical Engineering, Pathology Wake Forest School of Medicine  
[mgurcan@wakehealth.edu](mailto:mgurcan@wakehealth.edu)

Dr. Metin Gurcan is the founding Director of the Center for Biomedical Informatics and Professor of Internal Medicine, Pathology, and Biomedical Engineering at Wake Forest School of Medicine and Director of the Clinical Image Analysis Lab (<http://tsi.wakehealth.edu/CIALab/>). Previously, he was Professor of Biomedical Informatics and Pathology, Director of Division of Clinical and Translational Informatics at The Ohio State University. Dr. Gurcan is an internationally recognized researcher and educator in the fields of medical image analysis, artificial intelligence, and biomedical informatics. His research has been supported by NIH NCATS, NCI, NIDCD, NHLBI, NBIB, NIAID, DOD, as well as awards from several nonprofit organizations. He is the author of over 200 peer-reviewed publications, book chapters and was awarded six patents for his inventions in medical image analysis. Dr. Gurcan received his BSc. and Ph.D. degrees in Electrical and Electronics Engineering from Bilkent University, Turkey, and his MSc. Degree in Digital Systems Engineering from the University of Manchester Institute of Science and Technology, England.

Dr. Gurcan is the recipient of several awards, including the British Foreign and Commonwealth Organization Award, NCI caBIG Embodying the Vision Award, NIH Exceptional, Unconventional Research Enabling Knowledge Acceleration (EUREKA) Award, Children's Neuroblastoma Cancer Foundation Young Investigator Award, The OSU Cancer Center REAP Award, and Pelotonia Idea Award. He is a Fellow of SPIE and a senior member of IEEE and AMIA. He currently serves on the editorial boards of the Journal of Pathology Informatics and Journal of Medical Imaging; organizes the Pathology Informatics Histopathological Image Analysis (HIMA) workshop; and co-chaired the SPIE Medical Imaging Symposium between 2019-2022.



### Charles D. Hawker, PhD, MBA

Scientific Director for Automation and Special Projects (Retired), ARUP Laboratories  
charlie@charlesdhawker.com

Dr. Charles Hawker retired as Scientific Director for Automation and Special Projects after 26 years at ARUP. He also retired as Professor (Adjunct) of Pathology in the University of Utah, School of Medicine. Prior to joining ARUP, over a twenty year period, he held various positions in research and development and management at Laboratory Procedures, Inc. (Upjohn) and SmithKline Beecham Clinical Labs. He has received numerous awards including AACCC's highest award, the Outstanding Lifetime Achievement Award in Clinical Chemistry and Laboratory Medicine, and other awards from the National Academy of Clinical Biochemistry (NACB), the Clinical and Laboratory Standards Institute (CLSI), the Association of Clinical Scientists (ACS), and the Association for Laboratory Automation. Dr. Hawker is a co-author of chapters on clinical laboratory automation in the 4th through 7th Editions of the Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, and the 6th through 8th Editions of the Tietz Fundamentals of Clinical Chemistry. He is a frequent lecturer on laboratory automation to national and international audiences. He holds three patents and has published 50 peer-reviewed papers, 18 book chapters or invited reviews, three invited editorials, and 49 abstracts. At ARUP he installed several major automation and robotic systems that helped make ARUP the most automated clinical laboratory in North America. These systems collectively improved productivity and quality, especially enabling ARUP to become the first laboratory to achieve Six-Sigma quality levels for lost specimens. He later developed an automated camera system that uses optical character recognition (OCR) to identify specimens mislabeled by patient name.



### Keren Hulkower, PhD

Senior Clinical Release Manager, College of American Pathologists  
khulkow@cap.org

Keren Isaac Hulkower received his BS in Biology from Cook College, Rutgers University, his MS in Microbiology and PhD in Biochemistry from the University of Pittsburgh School of Medicine and was a visiting student at the Weizmann Institute of Science. Dr. Hulkower did postdoctoral research at the University of Pittsburgh School of Medicine and Hoffmann La Roche. He was a Senior Pharmacologist in inflammation and cancer research in the Pharmaceutical Products Division and a Senior Technical Specialist in the Diagnostic Division during his tenure with Abbott Laboratories. He served as Director of Business Development at Integrated DNA Technologies and worked as a senior manager at several start up biotechnology companies prior to joining the College of American Pathologists in 2011. Dr. Hulkower is Senior Clinical Release Manager for the Cancer Protocols and Data Standards Team at the College where he leads the group responsible for content updates, quality assurance, and release of the CAP Cancer Protocols and electronic Cancer Protocols. Dr. Hulkower also serves as a staff liaison to the CAP Cancer and Pathology Electronic Reporting Committees.



### Tae Hyun Hwang, PhD

Florida Department of Health Cancer Chair  
Professor Departments of Artificial Intelligence and Informatics; Immunology & Cancer Biology Mayo Clinic  
TaeHyun@mayo.edu

Tae Hyun Hwang PhD holds an endowed Florida Department of Health Cancer Chair position in the department of Artificial Intelligence and Informatics, Cancer Biology and Immunology at Mayo Clinic. His research is focused on developing novel machine learning and AI algorithms utilizing spatial transcriptome/proteomics, single cell, digital pathology and other omics data to deliver precision oncology care.



### Mike Isaacs

Director, Clinical Informatics and Business Development, Departments of Pathology and Immunology Washington University  
isaacs@wustl.edu

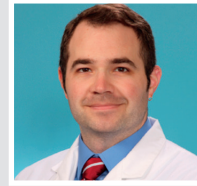
Mike Isaacs is the Director of Clinical informatics and Business Development at Washington University in the Department of Pathology and Immunology. He has a computer science background and over 25 years of experience in supporting Information Technology in the laboratory, which has provided him with the experience to identify the informatic needs of the department. Mike has been involved with Digital pathology for over ten years and has developed multiple digital workflows to take advantage of technology in the laboratory. For the last two years, he has focused on building and integrating Digital Pathology Solutions for Internal use and for our Outreach Client business at WU/BJC hospital. His primary interest is providing a strategic vision for the implementation of Digital Pathology for the BJC HealthCare system, which consists of 15 hospitals in two states. He is currently on the DPA board of Directors and sits on the foundation and education committees of the DPA.



### Brian Jackson, MD, MS

Medical Director, Business Development ARUP Laboratories  
brian.jackson@aruplab.com

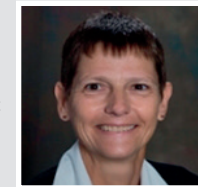
Brian Jackson, MD, MS, is a speaker, author, and an adjunct professor of pathology and biomedical informatics at the University of Utah. He is also medical director for business development at ARUP Laboratories. Dr. Jackson received his BA (mathematics), MS (medical informatics), and MD degrees from the University of Utah. He completed residency in clinical pathology at Dartmouth-Hitchcock Medical Center, followed by an NLM fellowship in medical informatics at the University of Utah. His research focuses on ethics within the healthcare industry.



### Ronald Jackups, MD, PhD

Associate Professor, Washington University  
School of Medicine, St. Louis  
rjackups@wustl.edu

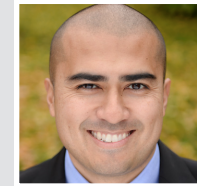
Ronald Jackups, MD, PhD is the program director for the Clinical Informatics fellowship at Washington University School of Medicine and the chief medical information officer for laboratories at BJC Healthcare in St. Louis, MO. His clinical and research interests include the use of clinical decision support to improve the utilization of laboratory testing and blood transfusion in healthcare systems.



### Elizabeth A. Krupinski, PhD

Professor & Vice Chair for Research Department of Radiology & Imaging Sciences Emory University  
ekrupin@emory.edu

Dr. Krupinski is a Professor and Vice Chair for Research at Emory University in the Departments of Radiology & Imaging Sciences, Psychology and Medical Informatics. She received her BA from Cornell, MA from Montclair State and PhD from Temple, all in Experimental Psychology. Her interests are in medical image perception, observer performance, medical decision making, and human factors in image-based clinical applications including radiology and pathology. She is Associate Director of Evaluation of the Arizona Telemedicine Program and Director of the Southwest Telehealth Resource Center. She has published extensively in these areas and has presented at conferences nationally and internationally. She is Past Chair of the SPIE Medical Imaging Conference, Past President of the American Telemedicine Association, President of the Medical Image Perception Society, Past Chair of the Society for Imaging Informatics in Medicine and President of the Society for Education and the Advancement of Research in Connected Health. She serves on a number of editorial boards for both radiology and telemedicine journals and is the Editor of the Journal of Digital Imaging and Telemedicine Reports. She serves regularly as a grant reviewer for the NIH, DoD, TATRC and other federal, state and international funding agencies and has served as a member of a number of FDA review panels.



### Patrick Mathias, MD, PhD

Associate Medical Director, Laboratory Informatics, University of Washington School of Medicine  
pcm10@uw.edu

Patrick Mathias, MD, PhD, is an Assistant Professor who serves as the Vice Chair of Clinical Operations and the Associate Medical Director of the Informatics division in the Department of Laboratory Medicine and Pathology at the University of Washington School of Medicine. He is also the Medical Director of Point of Care Testing for Airlift Northwest (flight transport service covering Washington and Alaska). He is board certified in Clinical Pathology and Clinical Informatics. Prior to postgraduate medical training, he earned his undergraduate degree in electrical engineering from Duke University and completed his M.D. and Ph.D. in bioengineering from the University of Illinois with a research focus on nanophotonics and biosensors. Dr. Mathias's informatics responsibilities cover improving electronic health record systems to improve the ordering and interpretation of laboratory tests and developing infrastructure to support advanced analytical technologies in the clinical laboratory. In addition he supervises departmental analytics efforts to improve laboratory operations and assess the lab's impact on clinical care. His research interests include assessing the cost effectiveness of testing and informatics interventions at a population level. He is also a strong believer in establishing data science as a core skill in medicine and teaches programming and data analysis skills to the laboratory medicine and pathology community.



### Samuel McCash, MD

Clinical Pathologist, Department of Laboratory Medicine Memorial Sloan Kettering Cancer Center  
mccashs@mskcc.org

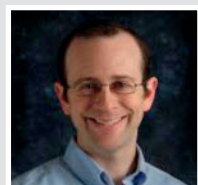
Dr. Samuel (Sam) McCash is the Medical Director of Laboratory Information Systems in the Department of Pathology and Laboratory Medicine at Memorial Sloan Kettering (MSK) Cancer Center. He is boarded in anatomic and clinical pathology by the American Board of Pathology with specialty boards in Clinical Informatics. His work focus is in using laboratory data and information systems to enhance clinical operations for the optimization of patient care and safety. Past projects include automated critical call-back systems, specimen tracking for clinicians, and real-time lab process monitoring with automated alerts.



### David McClintock, MD

Chair, Division of Computational Pathology and Artificial Intelligence and a Senior Associate Consultant within the Department of Laboratory Medicine and Pathology, Mayo Clinic  
mcclintock.david@mayo.edu

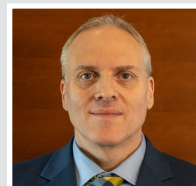
Dr. David McClintock is the Chair of the Division of Computational Pathology and Artificial Intelligence within the Department of Laboratory Medicine and Pathology at Mayo Clinic, Rochester. Current professional interests include the use of machine learning and artificial intelligence tools to improve patient care, clinical laboratory workflows, operational efficiency, and scientific discovery. He is currently the Program Committee Chair within the Association for Pathology Informatics.



### Amrom Obstfeld MD, PhD

Assistant Professor of Clinical Pathology and Laboratory Medicine, University of Pennsylvania Perelman School of Medicine  
obstfelda@chop.edu

Amrom Obstfeld MD, PhD, is the Associate Chair of Pathology Informatics as well as the Hematology Laboratory at Children's Hospital of Philadelphia. After receiving his MD and PhD degrees from the College of Physicians and Surgeons at Columbia University, he went on to train in Clinical Pathology at the Hospital of the University of Pennsylvania. In addition to his duties within the Hematology Laboratory, Dr. Obstfeld's clinical responsibilities include leading the development of analytic tools to aid in laboratory quality management, administration, and operation, and interfacing with other groups throughout the hospital on informatics initiatives. His research focuses on utilizing clinical and pre-clinical laboratory data sets for predicting diagnosis and prognosis using statistical and machine learning techniques. Dr. Obstfeld plays a major role in designing and implementing educational experiences for pathology trainees and faculty at the University of Pennsylvania within the areas of clinical and pathology informatics.



### Liron Pantanowitz, MBBCh

Chair, Department of Pathology  
University of Pittsburgh Medical Center  
pantanowitzl2@upmc.edu

Dr. Liron Pantanowitz is Chair and Professor of Pathology at the University of Pittsburgh & University of Pittsburgh Medical Center. He received his medical degree and PhD from the University of Witwatersrand in South Africa. He completed his anatomical and clinical pathology residency training at Beth Israel Deaconess Medical Center, Harvard in Boston. He subsequently completed a hematopathology fellowship at Harvard and Cytopathology fellowship at Tufts. He is also board certified by the American Board of Pathology in clinical informatics. He received his MHA from Ohio University. Dr. Pantanowitz is an Editor-in-Chief of the Journal of Pathology Informatics. He is a past president and current council member of the Association of Pathology Informatics, president of the American Society of Cytopathology, and president of the Digital Pathology Association. He is widely published in the field of pathology informatics and cytopathology. His research interests include digital pathology, artificial intelligence and non-gynecological cytopathology.



### Gary W. Procop, MD

Chief Executive Officer American Board of Pathology  
gprocop@abpath.org

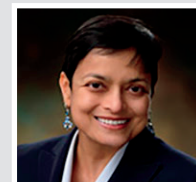
Prior to Dr. Procop's position with the ABPath, Dr. Procop was a Medical Director in Clinical Microbiology and an Infectious Disease Pathologist at the Cleveland Clinic. He held the Belinda YenLieberman PhD and James Lieberman MD Endowed Chair in Clinical Microbiology and was the Director of Molecular Microbiology, Virology, Mycology, and Parasitology laboratories and the Vice Chair for Education. Dr. Procop was a Trustee of the ABPath from 2007-2018 and served as President in 2016, Vice President in 2015 and Secretary in 2013-2014. His responsibilities at the ABPath included Chair of the Test Development and Advisory Committee for Microbiology, the Ethics and Professionalism Committee, and the Maintenance of Certification Committee. In August 2019, he was honored for his many contributions to the ABPath as a Life Trustee. Dr. Procop received a Bachelor of Science degree from Eastern Michigan University, followed by MD and MS degrees at Marshall University School of Medicine. He completed residency training in Anatomic and Clinical Pathology at Duke University Medical Center and fellowship training in Clinical Microbiology at the Mayo Clinic. He is board certified in Anatomic and Clinical Pathology, Medical Microbiology, and is participating in Continuing Certification. Dr. Procop serves on the ABMS Board of Directors and is a Fellow of the American Academy of Microbiology, the College of American Pathologists, the American Society for Clinical Pathology, the Infectious Diseases Society of America, and the Royal Society of Tropical Medicine and Hygiene.



### Jansen Seheult, MB BCH BAO, MSc, MS, MD

Senior Associate Consultant, Mayo Clinic  
seheult.jansen@mayo.edu

Jansen N Seheult, MB BCH BAO, MSc, MS, MD is a Senior Associate Consultant in the Division of Hematopathology, Department of Laboratory Medicine and Pathology at Mayo Clinic, Rochester in the United States. He completed his residency training in clinical pathology and fellowship training in Blood Banking/ Transfusion Medicine at the University of Pittsburgh Medical Center (UPMC) in Pittsburgh, PA as well as fellowship training in Special Coagulation at the Mayo Clinic, Rochester, MN. Dr. Seheult has extensive experience in data analytics, simulation techniques and machine learning. His doctoral research at the Royal College of Surgeons in Ireland focused on development of a novel technology for acoustic signal processing of time-stamped inhaler events for the prediction of drug delivery from a dry powder inhaler. Dr. Seheult's artificial intelligence (AI) interests include natural language processing for automated text report generation for pathology reports, segmentation and object detection algorithms for benign and malignant hematopathology, and neural networks for automated flow cytometry analysis and gating.



### Ila Singh, MD, PhD

Chief, Laboratory Medicine & Pathology Informatics, Texas Children's Hospital  
Professor, Baylor College of Medicine  
irsingh@texaschildrens.org

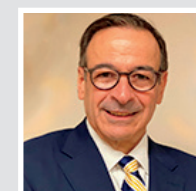
Dr. Singh serves as Chief of Laboratory Medicine, and Chief of Pathology Informatics at Texas Children's Hospital, and as tenured Professor of Pathology & Immunology at Baylor College of Medicine. She is the Program Director for the Clinical Informatics fellowship. Dr. Singh completed her M.D. at the University of Bombay, and her Ph.D. at Yale University. She served as a Jane Coffin Childs Fellow at Stanford University and completed her Clinical Pathology residency training at Columbia University Medical Center in New York City. She is dual board-certified in Clinical Pathology and in Clinical Informatics. She is interested in testing and reporting for COVID-19, and the impact of the pandemic on laboratory testing in general. Dr. Singh has special expertise in Laboratory Test Utilization Management/Stewardship, as evidenced by her involvement in creating the first Clinical and Laboratory Standards Institute (CLSI) document on Test Utilization, and her membership on the national committee on Lab Test Utilization and Stewardship that co-authored the consensus document on the subject. Her current research is focused on using Artificial Intelligence/Deep Learning approaches to determine risk stratification, prescriptive analytics, better utilization of healthcare resources, and optimization of treatment protocols. She is the founder of TRUU-Lab, a national initiative to change the names of clinical lab tests to those that are more standardized and easily understood by clinicians.



### Michelle Stoffel, MD, PhD

Associate CMIO for Lab Medicine and Pathology MHealth Fairview, University of Minnesota  
stoff129@umn.edu

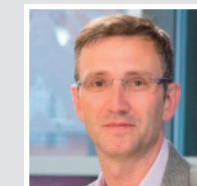
Michelle Stoffel, MD, PhD, is the Associate CMIO for Laboratory Medicine and Pathology at the M Health Fairview health system and an Assistant Professor in the Department of Laboratory Medicine and Pathology at the University of Minnesota. Her academic and operational focus is on bridging the practice of informatics from the lab to clinicians and patients via the electronic medical record, with additional interests in clinical and pathology informatics education.



### Sam C. Terese, MBA, MT (ASCP)

CEO and President, Alverno Laboratories  
sam.terese@alvernolabs.com

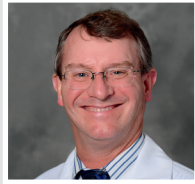
Currently Mr. Sam Terese holds the position of Chief Executive Officer and President of Alverno Laboratories. Sam Terese, MBA, MT (ASCP), has more than 40 years of experience in laboratory medicine. During his tenure in the laboratory, he has held positions as Phlebotomist, Medical Technologist, Laboratory Director, Vice President, and Chief Operating Officer. Mr. Terese holds an M.B.A. from the University of Illinois at Chicago in Strategic Planning and Marketing and bachelor's degrees in Medical Technology from Rosalind Franklin University Chicago and Biology from the State University of New York at Buffalo. Alverno Laboratories owns or operates 24 hospital laboratories and partners with several other hospitals and operates an extensive reference laboratory operation in Hammond Indiana.



### Darren Treanor, MB, BSc (Computing), PhD, FRCPath

Consultant Pathologist & Director of National Pathology Imaging Cooperative  
darrentreanor@nhs.net

Prof. Darren Treanor MB BSc (Computing) MD PhD is a consultant pathologist at Leeds Teaching Hospitals NHS Trust, honorary professor of pathology at the University of Leeds, adjunct professor in digital pathology at Linköping University, Sweden and Digital Pathology Lead for the UK Royal College of Pathologists. He is a clinical director of the UKRI Centre for Doctoral Training in Artificial Intelligence in Healthcare at the University of Leeds. Dual qualified in medicine and computing, Dr. Treanor runs the Leeds virtual pathology project, with a multi-disciplinary team working in digital pathology research and innovation. He has co-authored over 150 papers in the medical and computing literature, most of them concerned with the application or development of digital pathology in clinical and preclinical areas. He is director of the National Pathology Imaging Cooperative, a £80m Industry-NHS collaboration to deploy digital pathology across 22 sites in the North of England, covering a population of 6 million patients, and two national systems across a further 20 hospitals to support sarcoma/bone and paediatric tumour diagnosis. NPIC will use this infrastructure to develop and test artificial intelligence systems to diagnose cancer. At Linköping his research includes the clinical adoption and validation of digital pathology in a fully digitised department, and the development and implementation of AI. Other research activities include 3D tissue reconstruction, image analysis, colour measurement/ correction and the use of digital pathology in education and training. Further details are available at <http://www.virtualpathology.leeds.ac.uk> and [npic.ac.uk](http://npic.ac.uk).



### J. Mark Tuthill, MD

Department Head, Pathology Informatics,  
Henry Ford Health System  
mtuthill1@hfhs.org

J. Mark Tuthill, MD, completed pathology residency and informatics fellowship training at the University of Vermont College of Medicine-Fletcher Allen Health Care, and created the department's division of pathology informatics. Dr. Tuthill is currently Division Head of Pathology Informatics at Henry Ford Health System in Detroit. Areas of interest include digital pathology implementation, Internet applications for laboratory services, laboratory information systems, business analytics, electronic health records and informatics training and education. Active in organized medicine, he is an advisor to the ASCP Annual Meeting Steering Committee; Delegate, Wayne Medical Society; Co-Director for the API's Pathology Informatics Summit; and Delegate for CDC's CLIAC committee. As a charter member of the Association for Pathology Informatics, Dr. Tuthill has worked for the API from its inception serving as president of the membership committee, education committee member, and the organization's original planning group.



### Mitko Veta, PhD

Assistant Professor, Biomedical  
Engineering Eindhoven University of  
Technology, The Netherlands  
M.Veta@tue.nl

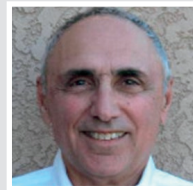
Mitko Veta is an Assistant Professor in the Department of Biomedical Engineering, Eindhoven University of Technology, The Netherlands. His research focuses on the development and application of deep learning/artificial intelligence (AI) methods for medical image analysis and histopathology imaging in particular. His ultimate goal is to develop methodology that will lead to better treatment planning for the patients and reduction of healthcare costs.



### Drew Williamson, MD

Clinical Informatics Fellow Massachusetts  
General Hospital  
drew.fk.williamson@gmail.com

Drew Williamson earned his MD from Case Western Reserve University in Cleveland, Ohio, and completed Anatomic Pathology residency followed by Molecular Genetic Pathology fellowship at Brigham & Women's Hospital. He is currently a fellow in Clinical Informatics at Massachusetts General and a member of the lab of Faisal Mahmood, where his research focuses on applying novel deep learning techniques to pathology data.



### Dennis Winsten, MS, FHIMSS, FCLMA

President, Dennis Winsten & Associates  
dwinsten@msn.org

Dennis Winsten is president of Dennis Winsten & Associates, a laboratory information systems consulting firm, headquartered in Tucson, Arizona. He has over 30 years of experience with clinical and anatomic pathology laboratory information systems from both a user's and provider's perspective and in-depth knowledge of the various vendor systems, user requirements, and market and laboratory trends. His professional affiliations include: Association for Pathology Informatics (API), Healthcare Information and Management Systems Society (HIMSS) and Clinical and Laboratory Standards Institute (CLSI) - Area Committee on Automation and Informatics. Published papers have included topics on laboratory system evaluation, selection, and installation, multi-site networks, system contract criteria, HIS interfacing, and other subjects related to laboratory information systems. He has been a speaker at numerous national seminars and professional meetings. He is Co-Editor, with Dr. Ray Aller, of CAP Today NewsBytes and the annual CAP Today LIS and AP Systems surveys.



### Mustafa Yousif, MD

Director of Digital Pathology,  
University of Michigan  
mustafay@med.umich.edu

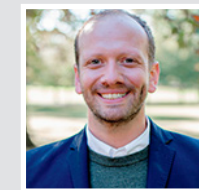
Dr. Mustafa Yousif is an Assistant Professor and the Director of digital Pathology at the University of Michigan in Ann Arbor, MI. He received his medical degree from the University of Al-Mustansiriyah in Baghdad, Iraq. He completed his anatomical and clinical pathology residency training at Wake Forest University. He subsequently completed a Gynecologic and Breast Pathology fellowship at the University of Pittsburgh Medical Center and a Pathology Informatics fellowship at the Department of Pathology Informatics, University of Michigan. Mustafa is interested and has deep knowledge in pathology informatics and digital pathology. His research interests include digital pathology and artificial intelligence, as well as gynecologic and breast pathology.



### Yinyin Yuan, PhD

Professor & Director of Computational  
Pathology, Department of Translational  
Molecular Pathology & Department of  
Pathology University of Texas, MD Anderson  
Cancer Center  
YYuan6@mdanderson.org

Dr. Yinyin Yuan is a professor and the Director of Computational Pathology Research Program at the Department of Translational Molecular Pathology, and the Co-Lead of the Institute for Data Science in Oncology, Focus Area One – Imaging and Digital Pathology at MD Anderson Cancer Center. She brings over a decade of experience in machine learning and digital pathology to cancer research, to develop innovative clinical tests and cancer therapies. Dr. Yuan obtained degrees in computer science from the University of Science and Technology of China (USTC, BSc) and University of Warwick (MSc and PhD), and has won prestigious awards and fellowships including the Pathologist Power List 2022 and a Junior Research Fellowship from Wolfson College, University of Cambridge. From 2012 to 2022 she headed the Computational Pathology and Integrative Genomics lab in 2012 at the Institute of Cancer Research, London. The focus of the Yuan lab is to decipher the tumor ecosystem through technological innovations in artificial intelligence (AI) and systematic interrogation of tissue biology using digital pathology and spatial transcriptomics, genetics, and proteomics. The scientific mission of her program is to elucidate differential ongoing selective pressure as key ecological processes shaping the emergence of immune evasion and drug resistance. The goal is to create a new paradigm of technological advances and multidisciplinary convergences that will lead the way to novel digital biomarkers and ultimately to the new frontier of integrated diagnostics.



### Mark A. Zaydman, MD, PhD

Assistant Professor, Pathology &  
Immunology, Washington University  
School of Medicine, St. Louis  
zaydmanm@wustl.edu

Mark A. Zaydman, MD, PhD, is an Assistant Professor of Pathology and Immunology at Washington University School of Medicine. His clinical and research efforts are focused on using informatics to help make the practice of laboratory medicine less of an art and more analytically grounded.

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Pictured: Nova Smith, Executive Director/Senior Conference Manager; Beth Gibson, Assistant Conference Manager and CME Coordinator



Pictured: Grace Chae, Marketing and Events Coordinator; with Dave McClintock



Pictured: Mary Nguyen, Myra Brown, Tina Dutzik, Beth Gibson, Michelle Bisceglia (missing Erminia Palmieri)





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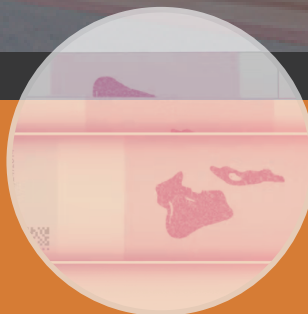
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