2019 PARTICIPATING EXHIBITORS

We gratefully acknowledge support from all of our exhibitors.

SEE EXHIBITOR MAP ON LAST PAGE OF PROGRAM

PLATINUM LEVEL

Hamatasu Corporation  Roche Diagnostics

GOLD LEVEL

Leica Biosystems

SILVER LEVEL

Abbott Informatics
AetherAI
Apollo
Caliber Imaging & Diagnostics, Inc.
General Data Healthcare, Inc.
Huron Digital Pathology
Inspirata
Mikroscan
Sakura Finetek USA, Inc.
Sectra Pathology PACS
Sunquest Information Systems, Inc.
Thermo Fisher Scientific
Visiopharm
Visiun
Voicebrook

BRONZE LEVEL

Gestalt Diagnostics
SPOT Imaging

NON-PROFIT ORGANIZATION

Digital Pathology Association

ACKNOWLEDGEMENT OF COMMERCIAL & NON-COMMERCIAL SUPPORT

COMMERCIAL SUPPORT

Philips Digital Pathology Solutions
General Data Healthcare, Inc.
Two Travel Awards
Pizza Lunch, Coffee Break

NON-COMMERCIAL SUPPORT

College of American Pathologists
Two Travel Awards, Advertising Support and PI Summit Tote Bags
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Exhibitor Ballroom Hours

GENERAL INFORMATION

MAIN REGISTRATION HOURS
Located in the Ballroom Level Lobby
Monday – Wednesday: 7 a.m.–5 p.m.
Thursday: 8 a.m.–Noon
Check-in & Registration for:
   General Attendees, Faculty, Travel Awardees,
   Abstracts & Poster Presenters, and Sponsors

EXHIBITOR REGISTRATION HOURS
Located in the Grand Ballroom
Monday, May 6: 10 a.m. to 6 p.m.
Tuesday, May 7: 7 a.m. to 5 p.m.
Wednesday, May 8: 7 a.m. to 6 p.m.
Check-in & Registration for:
   All Exhibitors

HOTEL WIFI NETWORK INFO
Username: API2019
Password: PISUMMIT19
LOG-IN for Monday Workshop: Introduction to R
Username: RAPI2019
Password: RPISUMMIT19

VISIT: pathologyinformatics.org
MAIL: PO Box 90319, Pittsburgh, PA 15224
EMAIL: nova.smith@pathologyinformatics.org

ASSOCIATION FOR PATHOLOGY INFORMATICS
PATHOLOGY INFORMATICS SUMMIT
Greetings and welcome to all of you. Thank you for joining us! The Pathology Informatics Summit 2019 is the 29th sequential year of a conference legacy resulting from the merger of two long-standing and successful previous conference series: APIII and Lab InfoTech Summit/AIMCL. All together, these two prior meeting sequences, along with the unified PI Summit series, have offered over 40 combined years of excellence in Pathology Informatics instruction and scholarly exchange for the pathology specialty.

Over these four decades, our specialty has witnessed a progressive succession of instruction topics, from coverage of the fundamentals of computing and information technology, to increasingly sophisticated exemplars where cogent use of information technology can be seen to greatly enhance both patient safety, as well as the diagnostic and predictive utility of the primary data generated by the collective fields of Anatomic Pathology and Laboratory Medicine. With the continued growth of Digital Pathology adoption for clinical use, in combination with explosive growth of the application of machine learning techniques within multiple areas of Pathology and Laboratory Medicine, this year’s meeting promises to be both stimulating and exciting and we cordially welcome you back to the Pathology Informatics Summit 2019. The conference is 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 on the tradition of hosting pre-conference activities, this year’s meeting offers four exciting sequences: 1) Foundational Topics in Pathology and Clinical Laboratory Informatics, 2) The HIMA Imaging Science Workshop, and 3) an entirely new workshop & practicum offered as an R Language Primer and Programming Symposium on Data Sciences. This latter offering has been designed from the ground up to address the growing demand for the attainment of competency in use of R among laboratorians and pathology informaticists, and we anticipate that it will become a staple event for future meetings. The fourth and final sequence, which is being offered as a Monday evening session, is the Digital Pathology Association’s Companion Meeting, entitled Hot Topics in Digital Pathology.

This year’s opening plenary sessions showcases a number of the most exciting developments in Pathology Informatics, including an overview on AI and Computational Pathology, as provided by the internationally recognized machine vision and AI expert, Anant Madabhushi. Additionally, plenary content includes an overview of opportunities for deploying computational methods in the clinical laboratory, as presented by Mary Edgerton, as well as coverage of some of the latest developments in advanced optical tissue interrogation techniques, as provided by back to back presentations on Light Sheet Microscopy and Stimulating Raman Histology, presented by Jonathan Liu and Sandra Camelo-Piragua, respectively. Finally, the meeting continues its tradition of offering two parallel tracks of short lectures on timely topics in the areas of Research and Applied Pathology Informatics. Similarly, we continue our tradition of offering both poster sessions and short scientific oral presentations, with the best of the latter category being promoted to a third track of formal podium presentations. On the second meeting day, attendees will benefit from a keynote presentation on workforce challenges from the President of the ASCP, Dr. Melissa Upton.
Refreshment and lunch breaks will provide you with ample time to browse the exhibitor ballroom, with displays by 21 exhibitors with IT-related products and services, allowing you to gain a host of new ideas and solutions from this concentrated assemblage of solution providers. Additionally, this year’s Summit witnesses a new feature in the exhibitor area, by providing two hours of live music during the opening evening, as provided by the nationally-billed pathologist-based classic rock band, Lost in Processing.

All of the faculty’s PowerPoint lectures, along with synchronized audio, will be posted on the conference website (pathologyinformatics.com) shortly after the conference adjournment. We invite you to take advantage of this rich educational resource in upcoming months, to reinforce what you will learn in the coming days of the Summit. The conference planning committee members will be available throughout the conference to solicit ideas from all of you about how the conference can be improved for our next Summit, which will be also held in May of 2020, in its new home at the Pittsburgh Convention Center and immediately adjacent Westin Hotel.

Finally, the organizing committee would like to recognize Hamamatsu Corporation and Roche Diagnostics for their generous sponsorship, in the capacity of serving as our two Platinum-level sponsors.

Ulysses G. J. Balis
Conference Director

J. Mark Tuthill
Conference Co-Director

Bruce A. Friedman
Conference Planning Committee Member

Anil Parwani
Conference Planning Committee Member

Thomas Durant
Conference Planning Committee Member

Nova Marie Smith
Senior Conference Manager

Beth Gibson
Conference Manager

THANK YOU TO OUR PLATINUM EXHIBITORS

HAMAMATSU

Roche
2019 SUMMIT OBJECTIVES

- Define the rapidly evolving field of Digital Pathology and showcase associated opportunities for expedited adoption of new workflow models and hardware solutions
- Present practical and emerging solutions for automated information and image management in pathology and the clinical laboratories
- Describe how workflow in the clinical laboratories and pathology can be supported and enhanced by new software and hardware solutions
- Understand the various software and hardware products available in the clinical laboratory and pathology market by interacting with a large number of exhibitors
- Present new research in pathology informatics on the basis of submitted competitive scientific abstracts
- Provide a forum for basic pathology informatics instruction for house officers and fellows in pathology training programs
- Provide fundamental knowledge in the emerging areas of machine learning, deep learning, and machine vision
- Provide updated best practices in the rapidly evolving area of digital pathology primary diagnosis
- Provide a forum where fundamental skills in the use of the R language and machine learning techniques can be gained

2019 TRAVEL Awardees

API and the 2018 PI Summit Planning Committee are pleased to have received financial support to fund the Travel Awards for trainees to attend. Awards are presented at the Travel Awardee Luncheon by the Co-Chairs of the API Training and Education Committee: Victor Brodsky, MD, Kinjal Shah, MD, and Toby Cornish, MD, PhD.

Simone Arvisais-Anhalt, MD  
University of Texas Southwestern Medical Center

Swikrity Baskota, MD  
University of Pittsburgh Medical Center

Paul Christensen, MD  
Houston Methodist Hospital

Jae-Hoon Chung, MD/PhD (student)  
The Ohio State University College of Medicine

Khalda Ibrahim, MD  
University of Louisville

Shohei Ikoma, MD  
UCLA

Jennifer Jakubowski  
Drexel University

Iny Jhun, PhD (student)  
Harvard Medical School

Hansen Lam, MD  
Icahn School of Medicine Mount Sinai

Rufei, Lu, MD, Phd  
University of Oklahoma College of Medicine

Emilio Madrigal, DO  
Massachusetts General Hospital

Mousumi Roy, PhD candidate  
Stony Brook University

Hossain Shakhawat, MS, PhD  
Memorial Sloan Kettering Cancer Center

Lauren Skvarca, MD, PhD  
University of Pittsburgh Medical Center

Aryeh Stock, MD  
Icahn School of Medicine Mount Sinai

Rami, Vanguri, MS, PhD  
Columbia University

Jacob Wooldridge, MD  
University of Texas Medical Branch

TRAVEL AWARD DONORS

College of American Pathologists  
Lifepoint Informatics  
(William Seay, CEO and Founder)

Keith Kaplan, MD, Publisher  
Tissuepathology.com

General Data Healthcare, Inc.  
Edward Klatt, MD, Professor of Pathology  
Mercer University
DAILY SCHEDULES
Sunday, May 5, 2019

Pre-conference Meeting

1:00–4:00 p.m. Joint meeting of the Association for Pathology Informatics, the College of American Pathology, and the American College of Radiology

Presenters from API/CAP/ACR

Ballroom 3

Monday, May 6, 2019

Foundational Topics in Pathology and Clinical Laboratory Informatics

Workshop Coordinators: Kinjal Shah and Toby Cornish | KINGS GARDEN 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00–8:00 a.m.</td>
<td>Breakfast</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>8:00–8:10 a.m.</td>
<td>Introduction to Morning Sessions</td>
<td>Toby Cornish, MD, PhD</td>
</tr>
<tr>
<td>8:10–9:00 a.m.</td>
<td>Buy, Build or Borrow? Filling Functional Gaps in your LIS</td>
<td>Toby Cornish, MD, PhD</td>
</tr>
<tr>
<td>9:00–9:50 a.m.</td>
<td>&quot;No, we can’t do that&quot;: How to Navigate Informatics Hurdles from a Private Practice Perspective</td>
<td>Chandra Krishnan, MD</td>
</tr>
<tr>
<td>9:50–10:10 a.m.</td>
<td>Refreshment Break</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>10:10–11:00 a.m.</td>
<td>CDS Applications Leveraging Machine Learning and Other Emerging Techniques</td>
<td>Jason Baron, MD</td>
</tr>
<tr>
<td>11:00–11:50 a.m.</td>
<td>Regulatory Considerations for Algorithmic Clinical Decision Support Tools</td>
<td>Thomas Gniadek, MD, PhD</td>
</tr>
<tr>
<td>11:50 a.m.–12:00 p.m.</td>
<td>Q&amp;A</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>12:00–1:00 p.m.</td>
<td>Lunch</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>1:00–1:10 p.m.</td>
<td>Introduction to the Afternoon Sessions</td>
<td>Kinjal Shah, MD</td>
</tr>
<tr>
<td>1:10–2:00 p.m.</td>
<td>Leveraging the EHR for Clinical Outcomes Management</td>
<td>Kinjal Shah, MD</td>
</tr>
<tr>
<td>2:00–2:50 p.m.</td>
<td>Reverse Federation: Boldly Going Where No Interface Has Gone Before</td>
<td>Keluo Yao, MD</td>
</tr>
<tr>
<td>2:50–3:10 p.m.</td>
<td>Refreshment Break</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>3:10–4:00 p.m.</td>
<td>Data Lakes, Warehouses and Marts, Oh My!</td>
<td>Chris Williams, MD</td>
</tr>
<tr>
<td>4:00–4:50 p.m.</td>
<td>Laboratory Analytics: Build vs Buy</td>
<td>Bryan Dangott, MD</td>
</tr>
<tr>
<td>4:50–5:00 p.m.</td>
<td>Q&amp;A</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
</tbody>
</table>
### Monday, May 6

**HIMA Imaging Science | All Day**

**Session Coordinator:** Metin Gurcan | KINGS GARDEN 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00–8:00 a.m.</td>
<td>Breakfast</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>8:00–8:05 a.m.</td>
<td>Introduction to HIMA</td>
<td>Metin Gurcan, PhD - Moderator</td>
</tr>
<tr>
<td>8:05–8:55 a.m.</td>
<td>Exploring the Future of Digital Pathology in Immuno-Oncology and Companion Diagnostics</td>
<td>George Lee, PhD</td>
</tr>
<tr>
<td>8:55–9:50 a.m.</td>
<td>Opportunities for Standardization and Collaboration in Developing Histopathology Image Analysis Algorithms</td>
<td>Steven Hart, PhD</td>
</tr>
<tr>
<td>9:50–10:10 a.m.</td>
<td>Refreshment Break</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>10:10–11:05 a.m.</td>
<td>Breaking the Barriers of Conventional Optics: Computational Photography in the Clinical Workflow</td>
<td>Itai Hayut, MSc</td>
</tr>
<tr>
<td>11:05 a.m.–12:00 p.m.</td>
<td>AI and Pathology in Training: Building and Explaining Algorithms to Medical Students</td>
<td>Scott Doyle, PhD</td>
</tr>
<tr>
<td>12:00–1:00 p.m.</td>
<td>Lunch</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>1:00–1:55 p.m.</td>
<td>Digital Pathology &amp; Artificial Intelligence, the Third Revolution in Pathology</td>
<td>Manuel Salto-Tellez, MD</td>
</tr>
<tr>
<td>1:55–2:50 p.m.</td>
<td>KiNet: Single-stage Nuclear Recognition and Classification for Measuring Ki-67 Proliferation Index (PI) in Pancreatic Neuroendocrine Tumors</td>
<td>Toby Cornish, MD, PhD</td>
</tr>
<tr>
<td>2:50–3:10 p.m.</td>
<td>Refreshment Break</td>
<td>Ballroom Lobby: 2nd Floor</td>
</tr>
<tr>
<td>3:10–4:05 p.m.</td>
<td>Models for Implementing Artificial Intelligence in Pathology Practice</td>
<td>Douglas Hartman, MD</td>
</tr>
<tr>
<td>4:05–5:00 p.m.</td>
<td>Panel Discussion</td>
<td></td>
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</tbody>
</table>

(continued)
Monday, May 6

**R Language Primer and Programming Symposium on Data Sciences**

**API Workshop Sponsor:** Mike Feldman, MD, PhD  |  **Workshop Coordinator:** Amrom Obstfeld, MD, PhD

**Brigade Room**

**Course Instructors:** Daniel Herman, MD, PhD, University of Pennsylvania, Stephan Kadauke, MD, PhD, Childrens Hospital of Philadelphia, Patrick Matthias, MD, PhD, University of Washington, Amrom Obstfeld, MD, PhD, Childrens Hospital of Philadelphia, Joseph Rudolf, MD, PhD, University of Minnesota

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00–8:00 a.m.</td>
<td>Breakfast - Ballroom Lobby - 2nd Floor</td>
</tr>
<tr>
<td>8:00–8:10 a.m.</td>
<td>Instructor Instructions</td>
</tr>
<tr>
<td>8:10–9:50 a.m.</td>
<td>Introduction to R and RStudio for Reproducible Reporting</td>
</tr>
<tr>
<td>9:50–10:10 a.m.</td>
<td>Refreshment Break - Ballroom Lobby - 2nd Floor</td>
</tr>
<tr>
<td>10:10–11:50 a.m.</td>
<td>Data Wrangling</td>
</tr>
<tr>
<td>12:00–1:00 p.m.</td>
<td>Lunch - Ballroom Lobby - 2nd Floor</td>
</tr>
<tr>
<td>1:00–2:50 p.m.</td>
<td>Data Understanding</td>
</tr>
<tr>
<td>2:50–3:10 p.m.</td>
<td>Refreshment Break - Ballroom Lobby - 2nd Floor</td>
</tr>
<tr>
<td>3:10–5:00 p.m.</td>
<td>Exploratory Data Analysis</td>
</tr>
</tbody>
</table>

**Digital Pathology Association Companion Meeting**

**Hot Topics in Digital Pathology**  |  **Early Evening Session**

**Workshop Coordinator:** Anil Parwani, MD, PhD, MBA  |  **Kings Garden 2/3**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00–5:10 p.m.</td>
<td>Introduction/Opening Remarks</td>
</tr>
<tr>
<td>5:10–5:30 p.m.</td>
<td>Primary Diagnosis using Digital Pathology: Current and Future Directions</td>
</tr>
<tr>
<td>5:30–6:00 p.m.</td>
<td>Integrating Digital Pathology with Your AP-LIS</td>
</tr>
<tr>
<td>6:00–6:30 p.m.</td>
<td>Beyond the H&amp;E slide: The Power of Algorithms and Image Quantitation</td>
</tr>
<tr>
<td>6:30–7:00 p.m.</td>
<td>“Whose Tissue is it Anyways?”; Using Digital Pathology Slides for AI Research: A Panel Discussion on the Regulatory and Ethical Issues</td>
</tr>
<tr>
<td>7:00 p.m.</td>
<td>Concluding Remarks/Wrap up</td>
</tr>
</tbody>
</table>

**Monday Night Dinner on Your Own**
### Short Abstract Presentations | Tuesday Morning

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Lectures</th>
</tr>
</thead>
</table>
| 8:00–9:00 a.m.    | Breakfast Exhibitor Ballroom | Short Abstract Lectures  
|                   |                           | GRAND BALLROOM 1  
|                   |                           | Moderator: Monica de Baca  
|                   |                           | Short Abstract Lectures  
|                   |                           | KINGS GARDEN 1  
|                   |                           | Moderator: Kinjal Shah  
|                   |                           | Short Abstract Lectures  
|                   |                           | KINGS GARDEN 2/3  
|                   |                           | Moderator: Veronica Klepeis  
|                   |                           | Short Abstract Lectures  
|                   |                           | BRIGADE ROOM  
|                   |                           | Moderator: Chris Williams  

#### API Vendor Partnership Sessions | Tuesday Morning

The API Vendor Partnership sessions are not part of the Pathology Informatics Summit 2019 accredited continuing medical education (CME) program. These sessions do not qualify for CME credits.

<table>
<thead>
<tr>
<th>TRACK 1</th>
<th>TRACK 2</th>
<th>TRACK 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Machine Learning</td>
<td>Applied Informatics</td>
<td>Selected Platform Lectures</td>
</tr>
<tr>
<td>KINGS GARDEN 2/3</td>
<td>GRAND BALLROOM 1</td>
<td>KINGS GARDEN 1</td>
</tr>
<tr>
<td>Moderator: Thomas Gniadek</td>
<td>Moderator: Rajesh Dash</td>
<td>Moderator: Michael Feldman</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 8:00–9:35 a.m.    | Machine Learning Fundamentals  
|                   | David McClintock, MD  
|                   | Laboratory Medicine Clinical Consult Service and How it is Embedded in the EMR  
|                   | Jordan Olson, MD  
|                   | An Artificial Intelligence Approach to Variant Calling of ALK Resistance Mutations in Clinical NGS Data  
|                   | Jochen Lennerz, MD, PhD  
| 9:00–9:45 a.m.    | Ten Minute Break to Switch Lectures  
|                   | General Approaches of Histopathological Image Classification Using Convolutional Neural Networks  
|                   | Jerome Cheng, MD  
|                   | Leveraging the EHR to Improve Transfusion Practice and Utilization  
|                   | Kinjal Shah, MD  
|                   | Visual Risk Pattern Recognition Informatics Expedites Rapid Triage of High Risk Complex Patients Vulnerable to Diagnostic Adverse Events  
|                   | Eleanor Travers, MD, MHA, FASCP  
| 9:35–9:45 a.m.    | Refreshment Break, Browse Exhibits and Poster Sessions  
| 10:20–11:20 a.m.  | Using Lab Data to Predict Clinical Outcomes  
|                   | Philip Chen, MD, PhD  
|                   | Payment Innovations To Improve Diagnostic Accuracy and Reduce Diagnostic Error  
|                   | James Sorace, MD, MS  
|                   | Using Generative Adversarial Networks to Remove Unwanted Pen Marks from Scanned Histology Slides Images  
|                   | Cleopatra Kozlowski  
| 12:00–1:00 p.m.   | Lunch Break – Exhibitor Ballroom  

### Plenary Lectures | Tuesday Afternoon

**Timely Topics: Update on Digital Pathology, Advanced Microscopic Imaging, Machine Learning, & Interoperability**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00–1:05 p.m.</td>
<td><strong>OPENING WELCOME TO PI SUMMIT 2019</strong></td>
<td>Ulysses G. J. Balis, MD and J. Mark Tuthill, MD</td>
</tr>
<tr>
<td>1:05–1:35 p.m.</td>
<td><strong>DAY ONE KEYNOTE PRESENTATION</strong></td>
<td>Anant Madabhushi, PhD</td>
</tr>
<tr>
<td>1:35–2:05 p.m.</td>
<td>Using Computational Methods to Improve Algorithms and Workflow in the Pathology Laboratory</td>
<td>Mary Edgerton, MD, PhD</td>
</tr>
<tr>
<td>2:05–2:35 p.m.</td>
<td>Nondestructive Anatomic 3D Pathology with Open-Top Light-Sheet Microscopy for Precision Medicine</td>
<td>Jonathan T. C. Liu, PhD</td>
</tr>
<tr>
<td>2:35–3:05 p.m.</td>
<td>Predicting Intraoperative Diagnosis of Brain Tumors Using AI and Stimulating Raman Histology (SRH)</td>
<td>Sandra Camelo-Paragua, MD</td>
</tr>
<tr>
<td>3:05–3:35 p.m.</td>
<td>Leveraging SNOMED-CT for the Generation of Truly Interoperable &amp; Machine Readability of Laboratory Reporting</td>
<td>W. Scott Campbell, MD</td>
</tr>
<tr>
<td>3:35–4:00 p.m.</td>
<td>Break, Browse Exhibits and Poster Sessions</td>
<td></td>
</tr>
<tr>
<td>4:00–4:30 p.m.</td>
<td>Renaming Lab Tests for Better Understanding and Utilization</td>
<td>Ila Singh, MD, PhD</td>
</tr>
<tr>
<td>4:30–5:20 p.m.</td>
<td>The First Fifty Years of Pathology Informatics in Review</td>
<td>Michael Becich, MD, PhD</td>
</tr>
<tr>
<td>5:30–7:30 p.m.</td>
<td><strong>OPENING NIGHT RECEPTION</strong></td>
<td>Special thanks to Dr. Balis for sponsoring the band</td>
</tr>
<tr>
<td>7:30–9:30 p.m.</td>
<td><strong>WOMEN IN PATHOLOGY INFORMATICS NETWORKING EVENT</strong></td>
<td>Skylounge (24th Floor), Wyndham Grand Pittsburgh Downtown</td>
</tr>
</tbody>
</table>
## SHORT ABSTRACT PRESENTATIONS | WEDNESDAY MORNING

### 7:00–8:00 a.m.

**Breakfast – Exhibitor Ballroom**

### 8:00–9:00 a.m.

<table>
<thead>
<tr>
<th>Short Abstract Lectures</th>
<th>Short Abstract Lectures</th>
<th>Short Abstract Lectures</th>
<th>Short Abstract Lectures</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAND BALLROOM 1</td>
<td>KINGS GARDEN 1</td>
<td>KINGS GARDEN 2/3</td>
<td>BRIGADE ROOM</td>
</tr>
<tr>
<td>Moderator:</td>
<td>Moderator:</td>
<td>Moderator:</td>
<td>Moderator:</td>
</tr>
<tr>
<td>David McClintock</td>
<td>John Blau</td>
<td>S. Joseph Sirintrapun</td>
<td>Toby Cornish</td>
</tr>
</tbody>
</table>

### TRACK PRESENTATIONS | WEDNESDAY MORNING

**TRACK 1**
**Applied Informatics: LIS Topics**
**KINGS GARDEN 2/3**
**Moderator: David McClintock**

**9:00–9:35 a.m.**

**Sustainable LIS Augmentation Strategies as Made Possible by Use of Microservices Architecture**
Chris Williams, MD

**Tools for the Development of CAP Electronic Cancer Checklists**
Veronica Klepeis, MD, PhD
Varsha Parekh, BSc, Engineering, PMP

### 9:35–9:45 a.m.

**Break to Switch Lectures**

### 9:45–10:20 a.m.

**Surviving and Thriving after a Lab-Wide Epic Deployment**
John Blau, MD

**2019 CAP eCC Migration to SDC**
Ross Simpson, MD

**A Modern Approach to Specimen Tracking in a Geographically Distributed Department**
Josh Jacques

### 10:20–11:20 a.m.

**Snack Break, Browse Exhibits and Poster Sessions**

### 11:20 a.m.–12:00 p.m.

**LIS Implications and Considerations in a Hospital to Hospital Integration**
J. Mark Tuthill, MD

**AJCC Staging Calculator (working with AJCC, CDC)**
Mary Edgerton, MD, PhD
Richard Moldwin, MD, PhD

**Revisiting Whole-Slide Imaging in The Context of Big Data: Strategies for Data Archival and Retention**
Mark Zarella, PhD

### 12:00–1:30 p.m.

**Lunch Break – Food Served in Exhibitor Ballroom**

(continued)
Wednesday, May 8, 2019

PLENARY PRESENTATIONS | WEDNESDAY AFTERNOON

Pathology Informatics’ Intersection with Precision Medicine: Present & Future State

**Moderators:** Ulysses G. J. Balis, MD and J. Mark Tuthill, MD

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1:30-2:00 p.m.</td>
<td><strong>DAY TWO KEYNOTE PRESENTATION</strong></td>
</tr>
<tr>
<td>2:00-2:30 p.m.</td>
<td>Pathology Imaging and Informatics as the Cornerstone of Precision Medicine: Two Years of Experience with the NIDDK Kidney Precision Medicine Project</td>
</tr>
<tr>
<td>2:30-3:30 p.m.</td>
<td>Town Hall – Key topics: Ethics of Data Sharing, WSI Device Certification, Job Pool, Informatics Training in 2019, Migration of LIS Computational Solutions to Single Vendor Solutions and the Cloud</td>
</tr>
<tr>
<td>3:30-4:30 p.m.</td>
<td>Snack Break, Browse Exhibits and Poster Sessions</td>
</tr>
<tr>
<td>4:30-5:30 p.m.</td>
<td>Association for Pathology Informatics Block</td>
</tr>
</tbody>
</table>

**CONFERENCE ADJOURNMENT FOR WEDNESDAY | DINNER ON YOUR OWN**

Thursday, May 9, 2019

PLENARY LECTURES | THURSDAY A.M.

Contemporary, Regulatory, Ethical & Developmental Topics in Pathology Informatics

**Moderator:** Ulysses G. J. Balis, MD

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00-9:00 a.m.</td>
<td>Breakfast – BALLROOM LOBBY – 2ND FLOOR</td>
</tr>
<tr>
<td>9:00-9:40 a.m.</td>
<td>Digital Pathology – Regulatory Considerations</td>
</tr>
<tr>
<td>9:40-11:00 a.m.</td>
<td>The Ethics of Data Sharing, Academic-Commercial Partnerships and Patient Consent for the Performing of Advanced Computational Analyses</td>
</tr>
<tr>
<td>11:00-11:05 a.m.</td>
<td>Stand Up Break</td>
</tr>
<tr>
<td>11:05-11:45 a.m.</td>
<td>How Explainable Artificial Intelligence (xAI) will Accelerate the Adoption of Machine Learning into Pathology Practice</td>
</tr>
<tr>
<td>11:45 a.m.–12:15 p.m.</td>
<td>WRAP-UP DISCUSSION AND MEETING SUMMARY</td>
</tr>
</tbody>
</table>
2019 POSTER SCHEDULE

Regan Baird  
Visiopharm – A Novel Method For High Parameter Multiplex Phenotyping And Analysis Of The Tumor Micro-Environment

Jae-Hoon Chung  
Large-Scale Implementation Of Whole Slide Imaging For Primary Diagnostics In Anatomic Pathology

Sangeeta Desai  
Validation Of Whole Slide Imaging (WSI) For Primary Surgical Pathology Diagnosis Of Prostate Biopsies

Robin Dietz  
Using Gotoassist To Improve Slide Scanning Workflow In A Distributed Setup

Robin Dietz  
Performance Of Deeppathology.Ai Helicobacter Pylori Detection Software

Lucy Fu  
Automated Triaging And Screening Cases Via Low-Power Images And A Microscopic-Field Based Machine Learning Approach

Yipeng Geng  
Life In The Fast Lane: Utilization Of Telepathology For Remote Intra-Departmental Consultation

Douglas Hartman  
Expanding The Use Of Hybrid Scanners Beyond Remote Intraoperative Consultation

Patrick Henn  
Utilizing Digital Image Analysis For Tumor Bud Quantification Demonstrates No Location Preference Of Highest Tumor Buds

Ping Chong Ho  
Predictive Colorectal Cancer By Machine Learning

Jim Hsu  
Bag Of N-Gram Features As Supervised Classifiers Of Cervical Pathology Specimens: A Retrospective Comparison of Cervical Cancer Screening Strategies

Shohei Ikoma  
The UCLA Experience Of Formatted Pathology-Radiology Correlative Reporting Using An Integrated Diagnostic Platform

Jennifer Jakubowski  
15 Years Of Image Analysis In A Clinical Setting: A Retrospective Analysis Of The Evolution Of Technologies And Procedure

Iny Jhun  
Digital Image Analysis Workflow For CD8+ Tumor Infiltrating Lymphocytes In Non-Small Cell Lung Cancer

Mark Lloyd  
Combining Deep Learning With Classical Domain-Based Detection For The Automated Identification Of Mitoses

Waqas Mahmud  
Using High Resolution Android Phone And Image Composite Editor (ICE) To Make Whole Slide Images (WSI) Of Biopsy Specimen

Mousumi Roy  
Deep Learning Based Method For Steatosis Quantification In Whole-Slide Liver Histopathology Images

Lindsey Seigh  
Establishing A Quality Control (QC) Process For Clinical CD8 Quantitative Image Analysis Testing

Paul Simonson  
Robust Epithelial Cell Staining In Breast Tissue For Light Sheet Microscopy

Lauren Skvarca  
Quantitative Image Analysis To Evaluate Podocalyxin As A Novel Biomarker Of Placental Vascular Changes In Preeclampsia

Swikrity Upadhyay Baskota  
A Comparative Study Of Intraoperative Teleneuropathology With Conventional Intraoperative Glass Slide Consultations

Yonah Ziemba  
Pathology Informatics Research Using Publicly Available Data: A Case Study

Jacob Abel  
Reference Interval (RI) Validation for Intact Parathyroid Hormone (IPTH) with Raw And Resampled Data

Robin Dietz  
Introducing the PIER App for Pathology Residents

Anoor Fnu  
Clinical Correlation to a Putative Reference Interval (RI)

Thomas Gniadek  
Explainable Artificial Intelligence in Pathology: A Multifaceted Framework To Guide Development And Evaluation

Klas Hatje  
Deep Learning to Predict Histopathology Findings From Gene Expression in a Mouse Model

Caylin Hickey  
Distributed Automated Processing of Clinical Genomic cancer Panels Leveraging Cloud Infrastructure

Kenji Ikemura  
Real Time Breast Histology Image Classification with a Mobile Phone

Jason Kang  
Sustained Benefits of Rules-Based Reflex Testing in Disease Association Testing

Rufei Lu  
Anatomical Pathology Laboratory Augmentation Using 3D Printing

Mark Luquette  
The Use Of Machine Vision Cameras in Photomicroscopy, Hidden Treasures and the Cutting Edge

Emilio Madrigal  
The Current Landscape of Clinical Informatics Education

Yao Nie  
Automatic Metadata Extraction from Tissue Slide Label Image

Andrey Prilutskiy  
Using Open-Source Software for Education: Creating a Basic Whole Slides Images Collection in Two Weeks.

Rebecca Pulk  
Implementation of a Clinical Pharmacogenomics Workflow With Integrated Clinical Decision Support

Somak Roy  
Docker Container-Based High-Performance Computing (HPC) Environment for Next Generation Sequencing (NGS) Data Analysis

Jacob Spector  
Patient Timeline: A Tool For Visualization of Objective Clinical Data

Jennifer Woo  
Incorporating the Nonbinary Gender Into the Laboratory Information System

Keluo Yao  
Application Of Reverse Federated Database System For Clinical Laboratory Service

JianHua Yao  
Efficient Breast Cancer Metastasis Detection from Histological Images Using Convolutional Encoder-Decoder Network

Yonah Ziemba  
Effective Text Searching in Pathology Records: Powerful Solutions That Are Available To Every Pathologist
2019 SHORT ABSTRACT SCHEDULE

TUESDAY, MAY 7

Advanced Pathology Informatics | KING’S GARDEN 2/3 | Moderator: Veronica Klepeis

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:30-8:45 a.m.</td>
<td>Mahdi S. Hosseini</td>
<td>Atlas of Digital Pathology Database: Pathologist Supervisory on Recognition of Histological Tissue Types</td>
</tr>
<tr>
<td>8:45–9:00 a.m.</td>
<td>Keren Hukower</td>
<td>Quantifying Data Element Evolution in Three CAP Electronic Cancer Checklist (eCC) Templates</td>
</tr>
</tbody>
</table>

Computational Pathology | KING’S GARDEN 1 | Moderator: John Blau

<table>
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<tr>
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<tbody>
<tr>
<td>8:00–8:15 a.m.</td>
<td>Anthony Magliocco</td>
<td>Application of Artificial Intelligence for Automatic Evaluation of Routine Whole Slide H&amp;E Images for Presence of Malignancy</td>
</tr>
<tr>
<td>8:15–8:30 a.m.</td>
<td>Limin Yu</td>
<td>Identification of Basal Cell Carcinoma in Intro-operative Frozen Section Using Deep Learning on Smart Phone Images</td>
</tr>
<tr>
<td>8:30–8:45 a.m.</td>
<td>Wei Huang</td>
<td>Prostate Cancer Diagnosis and Quantification Using AI-enabled Software (SW)</td>
</tr>
<tr>
<td>8:45–9:00 a.m.</td>
<td>Keith Callenberg</td>
<td>Analysis of Cell Galleries as an Interface for Reviewing Urine Cytology Cases</td>
</tr>
</tbody>
</table>

Applied Pathology Informatics | GRAND BALLROOM 1 | Moderator: Monica de Baca

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>8:00–8:15 a.m.</td>
<td>Jay Ye</td>
<td>Effective Use of R Language In Anatomic Pathology—Showcasing Diverse Examples of Usages Outside Statistical Computing</td>
</tr>
<tr>
<td>8:15–8:30 a.m.</td>
<td>Peter Gershkovich</td>
<td>Specimen Tracking from Operating Rooms to Pathology Intake</td>
</tr>
<tr>
<td>8:30–8:45 a.m.</td>
<td>Keluo Yao</td>
<td>An Innovative Web Application for Optimizing Pathologist Workflow in Clinical Pathology Sign-Out</td>
</tr>
<tr>
<td>8:45–9:00 a.m.</td>
<td>Aryeh Stock</td>
<td>Adaptive Automated Gross Transcription Using PhraseExpress: Intelligent Dictation</td>
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Imaging Informatics | BRIGADE ROOM | Moderator: Chris Williams

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00–8:15 a.m.</td>
<td>Hansen Lam</td>
<td>Pocket to Ceiling: Imaging Solutions to Optimize Gross Room Workflow</td>
</tr>
<tr>
<td>8:15–8:30 a.m.</td>
<td>Markus Daniel Herrmann</td>
<td>A Dicom-Based Machine Learning Workflow for Computational Pathology</td>
</tr>
<tr>
<td>8:30–8:45 a.m.</td>
<td>Emilio Madrigal</td>
<td>Query-Based Digital Media Archive for Anatomic Pathology</td>
</tr>
<tr>
<td>8:45–9:00 a.m.</td>
<td>Mark Lloyd</td>
<td>1 Million Reasons: Creating a Repository of Over 1 Million Whole Slide Images</td>
</tr>
</tbody>
</table>
### Imaging Informatics | KING’S GARDEN 2/3 | Moderator: Veronica Klepeis

<table>
<thead>
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<tr>
<td>8:00–8:15 a.m.</td>
<td>Shivam Kalra</td>
<td>A Bunch of Barcodes for Identification of Histopathology Images</td>
</tr>
<tr>
<td>8:15–8:30 a.m.</td>
<td>Weijie Chen</td>
<td>Characterization and Assessment of Deep Learning Systems for Histopathology Whole Slide Imaging</td>
</tr>
<tr>
<td>8:30–8:45 a.m.</td>
<td>Marios A Gavrielides</td>
<td>Effect of Feature Information–Aided Review on Pathology Trainee Performance for Ovarian Cancer Subtyping: An Observer Study</td>
</tr>
<tr>
<td>8:45–9:00 a.m.</td>
<td>Richard Torres</td>
<td>Intital Clinical Validation of Clearing Histology with Multiphoton Microscopy (CHIMP) for Prostate Biopsy Diagnosis</td>
</tr>
</tbody>
</table>

### Computational Pathology | KING’S GARDEN 1 | Moderator: Kinjal Shah

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<tr>
<td>8:00–8:15 a.m.</td>
<td>Hossain Md Shakhawat</td>
<td>Assessment of HER2 Amplification in Invasive Breast Cancer from CISH Using Digital and Computational Pathology</td>
</tr>
<tr>
<td>8:15–8:30 a.m.</td>
<td>Hsiang-Sheng Wang</td>
<td>Automatic Mycobacterium Tuberculosis Detection Using Simple Image Processing with Artificial Intelligence(AI)</td>
</tr>
<tr>
<td>8:30–8:45 a.m.</td>
<td>Paul Christensen</td>
<td>Java versus Data Analysis Expressions (DAX): A Comparison of Programming Effort</td>
</tr>
<tr>
<td>8:45a–9:00a</td>
<td>Mahdi S. Hosseini</td>
<td>From Patch–Level into Pixel–Level Annotation: Semantic Segmentation of Whole Slide Images by Histological Tissue Type</td>
</tr>
</tbody>
</table>

### Applied Pathology Informatics (abstracts for this category are presented in two different rooms)

#### GRAND BALLROOM 1 | Moderator: David McClintock

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<tr>
<td>8:00–8:15 a.m.</td>
<td>Orly Ardon</td>
<td>Digitally Tracking Manual Microscopy Slide Reading for Digital Workflow Development</td>
</tr>
<tr>
<td>8:15–8:30 a.m.</td>
<td>Cathy Chen</td>
<td>Improving Medical Students’ Understanding of Pediatric Diseases Through Philips Pathology Tutor (formerly PathXL)</td>
</tr>
<tr>
<td>8:30–8:45 a.m.</td>
<td>Veronica Klepeis</td>
<td>Analysis of Free-Text Comments Made by Pathologists in Cancer Synoptic Reports</td>
</tr>
<tr>
<td>8:45–9:00 a.m.</td>
<td>Alexander Turchin</td>
<td>Canary: a Natural Language Processing Platform for Clinicians and Researchers</td>
</tr>
</tbody>
</table>

#### BRIGADE ROOM | Moderator: Toby Cornish

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<tbody>
<tr>
<td>8:00–8:15 a.m.</td>
<td>Edward Klatt</td>
<td>Cognitive Informatics</td>
</tr>
<tr>
<td>8:15–8:30 a.m.</td>
<td>Mehrvash Haghighi</td>
<td>From Value Stream Mapping to Value-based Health Care</td>
</tr>
<tr>
<td>8:30–8:45 a.m.</td>
<td>Aryeh Stock</td>
<td>Converting the Narrative to Analytics: Unlock the Value of Your Data</td>
</tr>
<tr>
<td>8:45–9:00 a.m.</td>
<td>Yonah Ziemba &amp; Vanesa Bijol</td>
<td>Informatics Education in Pathology Residency Programs: A Successful Team-Based Approach</td>
</tr>
</tbody>
</table>
**DIRECTOR**

**Ulysses G. J. Balis, M.D., FCAP, FASCP, FAIMBE**

Professor of Pathology, Director, Division of Pathology Informatics, Director, Computational Pathology, Laboratory Section and Director, Pathology Informatics Fellowship Program, Department of Pathology, University of Michigan Medical School

ANN ARBOR, MI | ulysses@med.umich.edu

Dr. Balis (PI2019 Course Director) is Professor of Pathology and Director of the Division of Pathology Informatics at the University of Michigan, which itself maintains a team of three board-certified, full-time pathology Clinical Informaticists. As an elected Fellow of the American Institute for Medical and Biological Engineering (AIMBE), he has maintained longstanding interest in the intersection of engineering, computational approaches, 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 a central IT division. Dr. Balis has active NIH-supported research initiatives in several areas of pathology and medical informatics, including the recently awarded NIH-NIDDK Kidney Precision Medicine Project (KPMP), with these projects allowing for the application of a number of informatics concepts to 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 eight such two-year programs in the U.S. Similarly, he has maintained a longstanding interest in pathology informatics education, with him currently serving as one of the founding members of the Clinical Informatics Subspecialty Boards Exam Committee. Dr. Balis is the author of over 100 publications, many image-based algorithms, multiple patents, numerous 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 200 invited presentations, nationally and internationally, on various topics related to pathology informatics, data analytics, and image analysis.

**CO-DIRECTOR**

**J. Mark Tuthill, M.D.**

Division Head, Pathology Informatics, Henry Ford Health System

DETROIT, MI | mtuthil1@hfhs.org

J. Mark Tuthill, MD, completed his pathology residency and informatics fellowship training at the University of Vermont College of Medicine–Fletcher Allen Health Care, where he worked to create and direct that department’s division of pathology informatics. Currently, Dr. Tuthill is head of the division of pathology informatics at Henry Ford Health System in Detroit, Michigan. Some areas of practice interest include digital imaging and image databases, development of Internet applications for laboratory information services, anatomic pathology and clinical laboratory information systems, laboratory outreach technology solutions, electronic health records and informatics training and education. Active in organized medicine throughout his training and professional career, at present, he is an advisor to the ASCP Annual Meeting Steering Committee, Wayne County District Director for the MSMS, and Conference Co-Director for the annual Pathology Informatics Summit. As a charter member of the Association for Pathology Informatics, Dr. Tuthill has worked enthusiastically for the API from its inception. He has served as president, chairman of the membership committee, as an education committee member, and participated in the organization’s original planning group.

**PLANNING COMMITTEE**

**Thomas Durant, M.D.**

Clinical Microbiology Fellow, Yale New Haven Hospital

NEW HAVEN, CT | thomas.durant@yale.edu

Dr. Thomas Durant is the current Clinical Microbiology fellow at Yale New Haven Hospital and is an incoming Assistant Professor of Laboratory Medicine as the Medical Director of Clinical Chemistry and Laboratory Informatics at Yale University, Department of Laboratory Medicine. Dr. Durant is interested in general laboratory medicine and clinical informatics, with a particular focus in machine learning. His current research efforts focus on applied machine learning using digital microscopy to automate interpretation and/or identify disease.
Bruce Friedman, M.D.
Emeritus Professor of Pathology, University of Michigan Medical School; President, Pathology Education Consortium

ANN ARBOR, MI | friedman@labinfotech.com

Bruce Friedman is a graduate of the University of Michigan Medical School. He completed a pathology residency in the Department of Pathology, University of Michigan Medical School, in 1971. In 1973, he joined the pathology faculty of the University of Michigan. He served on the faculty of the University of Michigan for 33 years, retiring in 2006.

He served as the Director of Pathology Informatics in the Department of Pathology and also as Director of Clinical Support Systems for the University of Michigan Health System. He was a founder of the first pathology informatics conference in the country called AIMCL that was offered for 21 years in Ann Arbor beginning in 1983. In 2004, this conference was renamed Lab Infotech Summit and moved to Las Vegas for six years. This conference was merged with APIII in 2010 to form the Pathology Informatics Summit.

He is the founder of a blog named Lab Soft News that focuses on clinical lab software and the clinical lab industry. He was a founding member, and one of the two founding presidents, of the Association for Pathology Informatics (API). He served as the co-director of the Pathology Informatics Summit planning committee from 2010 to 2014. He continues to serve on the planning committee.

Anil Parwani, M.D., Ph.D., M.B.A.
Vice-Chair of Anatomic Pathology and Director of Pathology Informatics, Department of Pathology, Wexner Medical Center, Ohio State University

COLUMBUS, OH | anil.parwani@osumc.edu

Dr. Anil Parwani is a Professor of Pathology at The Ohio State University. He serves as the Vice Chair and Director of Anatomical Pathology. Dr. Parwani is also the Director of Pathology Informatics and Director of the Digital Pathology Shared Resource at The James Cancer Hospital. His research is focused on diagnostic and prognostic markers in bladder and prostate cancer, and molecular classification of renal cell carcinoma. Dr. Parwani has expertise in the area of Anatomical Pathology Informatics including designing quality assurance tools, bio banking informatics, clinical and research data integration, applications of whole slide imaging, digital imaging, telepathology, image analysis and lab automation. Dr. Parwani has authored over 250 peer-reviewed articles in major scientific journals and several books and book chapters. Dr. Parwani is the Editor-in-chief of Diagnostic Pathology and one of the Editors of the Journal of Pathology Informatics.

FACULTY

Jason Baron, M.D.
Medical Director, Core Laboratory, Investigator, Pathology Informatics, Department of Pathology, Massachusetts General Hospital

BOSTON, MA | jmbaron@partners.org

Jason Baron, MD, is a clinical pathologist and clinical informaticist. He divides his professional efforts between an academic and clinical role at the Massachusetts General Hospital (MGH), and an industry role as a computational pathology consultant, providing support to Roche Diagnostics.

Dr. Baron's research interests are focused on the application of artificial intelligence and analytics to laboratory diagnosis. His clinical responsibilities are within the MGH clinical Core Laboratory and include utilization-management, quality-improvement, clinical analytics and clinical informatics. Dr. Baron also serves as an assistant medical director within his hospital's physicians organization, where he analyzes clinical and laboratory data to identify and reduce unwarranted inter-physician variation in laboratory test ordering. Dr. Baron is a part–time Assistant Professor of Pathology at Harvard Medical School.

Michael J. Becich, M.D., Ph.D.
Associate Vice-Chancellor for Informatics in the Health Sciences, Chairman and Distinguished University Professor, Department of Biomedical Informatics, Director, Center for Commercial Application (CCA) of Healthcare Data, University of Pittsburgh School of Medicine

PITTSBURGH, PA | becich@pitt.edu

Dr. Becich is Professor and inaugural Chairman of the Department of Biomedical Informatics at the University of Pittsburgh School of Medicine. He is jointly appointed in Pathology, Information Sciences/Telecommunications and Clinical/Translational Research. He is Associate Director of the University of Pittsburgh Cancer Institute as well as the Clinical and Translational Science Institute at the University of Pittsburgh School of Medicine.

Dr. Becich’s research interests are focused on the interface between clinical informatics and bioinformatics. His research is funded by the CDC, NCATS, NCI, NHLBI and NLM and includes clinical phenotyping of patients for genomic/personalized medicine, tissue banking informatics, clinical informatics and bioinformatics with a special emphasis on data sharing. Dr. Becich is interested in transforming clinical care through translational research and creating a learning health system focused on cost effective, high quality and safe care through personalized medicine.
Recently funded grants include a PCORI CDRN and a NCATS CTSA Supplement which will link hundreds of clinical sites (primarily health systems affiliated with CTSA programs) with and innovative open source informatics infrastructure which allow for clinical research use of EHR data. This is a critical step for clinical and translational research nationally.

John Blau, M.D.

Director of Pathology Informatics, Clinical Assistant Professor of Pathology, Department of Pathology, University of Iowa Health Care

IOWA CITY, IA  |  john-blau@uiowa.edu

John Blau is an Associate Professor in the Department of Pathology in the Carver College of Medicine, and Director of Pathology Informatics at the University of Iowa. He trained in Anatomic and Clinical Pathology at the University of Iowa and completed a fellowship in Pathology Informatics at the University of Michigan. In addition to directing the operational informatics in the department, Dr. Blau also participates on the Transfusion Medicine and Autopsy services. Dr. Blau's areas of interest include imaging informatics and using informatics tools to improve quality of pathology clinical service and patient outcomes.

Sandra Camelo-Piragua, M.D.

Associate Professor, Neuropathology, Department of Pathology, Michigan Medicine/ University of Michigan

ANN ARBOR, MI  |  sandrdaca@med.umich.edu

Dr. Sandra Camelo-Piragua is a Clinical Associate Professor of Pathology at the University of Michigan. She is a practicing neuropathologist in a busy tertiary center with a robust in-house and consultation service in surgical and autopsy neuropathology. Dr. Camelo-Piragua is interested in the implementation of telepathology, WSI and new in-vivo imaging technologies. For the later, Dr. Camelo-Piragua has worked on Raman scattering microscopy intraoperatively to help guiding maximal tumor resection and providing pathologists with alternative imaging technologies for tissue diagnosis, quality assurance and research purposes. This effort has led to several major publications, previous and ongoing grant awards.

W. Scott Campbell, M.B.A., Ph.D.

Associate Professor, Sr. Director of Research Technologies—UNMC, Director of Pathology and Public Health Informatics

OMAHA, NE  |  wcampbel@unmc.edu

W. Scott Campbell, M.B.A., PhD is an associate professor in the Department of Pathology and Microbiology at the University of Nebraska Medical Center where he is also the Director of Pathology and Public Health Laboratory Informatics and the Senior Director of Research Information Technologies for UNMC. Dr. Campbell specializes in controlled medical terminologies and integration of clinical information systems. He is the principal investigator for a multiyear, NIH Big Data to Knowledge grant focused on the development and implementation of computable medical terminologies for laboratory medicine. Dr. Campbell is a certified SNOMED Implementation Advisor and trained SNOMED CT author and serves in multiple capacities within SNOMED International including as the Chair of the Cancer Synoptic Reporting Working Group. In this role, he is leading the international community towards fully computable and machine readable cancer reports to support clinical care and cancer research and is frequently invited to speak internationally on this topic.

Philip C. Chen, M.D., Ph.D.

Chief Strategy Officer, Sonic Healthcare USA

AUSTIN, TX  |  pchen@sonichealthcareusa.com

Philip Chen, M.D., Ph.D. is a board-certified pathologist and the Chief Strategy Officer of Sonic Healthcare USA. Until recently he was Sonic’s Chief Informatics Officer and led Sonic’s informatics initiatives and products, including the development of the iMorpheus clinical decision support, patient engagement and care coordination software. Phil has developed several community and population-based informatics initiatives which have been recognized by the National Committee for Quality Assurance (NCQA) and CNN Headline News. In recent years Phil has been focusing on using data-driven tools to enhance population health management through individual patient-specific interventions and identify specific financial beneficiaries in the integrated care delivery ecosystem. The integration of clinical and financial data has led to innovative value- and outcome-based reimbursement strategies for Sonic.

Phil received his MD and PhD from the University of Alabama in Birmingham and completed his pathology residency at Brigham and Women’s Hospital and Harvard Medical School. Prior to joining Sonic, he was Professor, Vice Chair, Chief of Clinical Pathology and Director of Informatics at the University of Miami and Jackson Health Systems. He also founded Cognoscenti Health Institute in 2002, a laboratory company in Florida which was acquired by Sonic.

Jerome Cheng, M.D.

Assistant Professor, Informatics, Department of Pathology, Michigan Medicine University of Michigan

ANN ARBOR, MI  |  jeromech@med.umich.edu

Dr. Cheng is a Clinical Assistant Professor of Pathology in the Division of Pathology Informatics, in the Department of Pathology at University of Michigan. He is board certified in...
AP/CP and Clinical Informatics. Research interests include image analysis, natural language processing, data mining, and application of machine learning techniques such as convolutional neural networks and Random Forests to image and non-image based medical datasets.

**Toby Cornish, M.D., Ph.D.**

Associate Professor, The University of Colorado School of Medicine; Medical Director of Informatics and Medical Director of the LIS for the University of Colorado Health System

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Dr. Cornish is an Associate Professor of Pathology at The University of Colorado School of Medicine where he practices gastrointestinal pathology and serves as the Medical Director of Informatics for the department of pathology and Medical Director of the LIS for the UC Health system. His interests include histologic image analysis, the application of digital pathology to education and clinical practice, and the development of mobile applications for pathology education. Dr. Cornish has co-developed a number of software packages for biomarker quantitation including TMAJ/FrIDA, PIP, and HPASubC. Dr. Cornish is the co-author of several educational apps for the iPad: The Johns Hopkins Atlas of Pancreatic Pathology, The Johns Hopkins Atlas of Pancreatic Cytopathology, The Johns Hopkins Flashcards App and the iCarebook for Pancreatic Cancer, and he is the series editor for the ongoing Johns Hopkins Atlases of Pathology series of apps. Dr. Cornish serves as co-chair of the Association of Pathology Informatics’ Education and Training Committee. He is the Informatics Section Editor for AJCP, serves on the College of American Pathologists (CAP) Digital and Computational Pathology Committee and is a coauthor of the CAP Pathology Resource Guide: Digital Pathology. He is a member of Cerner’s CoPathPlus Pathology Advisory Committee and Leica’s Pathology Imaging Advisory Board.

**Cheng Cui, Ph.D., RAC**

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Dr. Cheng Cui is a scientific reviewer in FDA’s Office of In Vitro Diagnostics and Radiological Health (OIR). He joined FDA-OIR in 2014. Dr. Cui provides scientific review of pre-submissions, 510(k)s and PMAs submitted to the Division of Molecular Genetics and Pathology. He specializes in the regulatory review of devices in the area of cytology, immunohistochemistry, digital pathology, and Software as Medical Device (SaMD) and assessment of their safety and effectiveness. Before joining FDA, he received his Ph.D. degree in Biophysics from Indiana University, Bloomington and had post-doctoral training experience in cell biology and developmental and molecular biology. Dr. Cui received Regulatory Affairs Certification (RAC) in 2018 and is currently serving on CLSI Automation and Informatics Expert Panel.

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Dr. Dangott is the Vice Chair for Pathology Informatics and Analytics at East Carolina University. In this role he develops prognostic and predictive algorithms using laboratory data, supports quality and lab utilization initiatives via data analysis, identifies trends and economic opportunities, and recommends and implements operational efficiencies through emerging digital technology. He board certified in Clinical Informatics, Hematopathology, Anatomic and Clinical Pathology.

**Scott Doyle, Ph.D.**

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Scott Doyle, PhD is an Assistant Professor in the Department of Pathology and Anatomical Sciences at the University at Buffalo, SUNY. Dr. Doyle received his PhD in Biomedical Engineering at Rutgers University, where he studied image analysis and pattern recognition in the context of prostate cancer detection and grading. Following his PhD, Dr. Doyle worked for a startup company to build a system for breast cancer analysis, which uses H&E-stained biopsy samples to predict patient outcome. This serves as an alternative to expensive genetic testing while providing the same predictive performance, indicating that genetic information can be found embedded in image structure. In his current position, he directs the Doyle Laboratory in researching artificial intelligence in the context of biomedical problems. His research interests include efficient training, modification, and error-correction for deep learning algorithms; how to properly translate research concepts into clinical insights; and training students from both engineering and biological backgrounds in the correct use of complex machine learning approaches.

**Mary E. Edgerton, M.D., Ph.D.**

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Mary E. Edgerton, M.D., Ph.D. received her B.S. with Highest Honors in Physics from the University of Texas at Austin. She
was awarded a Marshall Scholarship to the United Kingdom, and subsequently received her PhD in Biophysics from the University of East Anglia. Following nearly a decade of research in the oil industry, Dr. Edgerton attended the Medical College of Pennsylvania and after graduating completed a residency in anatomic and clinical pathology and a fellowship in surgical pathology fellowship at the University of Pennsylvania. In addition to research in data mining, bioinformatics, and mathematical model of tumors, she has worked on the development of integrated information platforms for tissue acquisition, clinical annotation, and molecular profiling, and is internationally recognized in the field of tissue informatics. At MD Anderson she has worked on the development of an enterprise system for tissue banking across the institution and is currently working on a catalogue for searching biospecimen availability across the MD Anderson sister institution network. She is a member of the College of American Pathology (CAP) “Pathology Electronic Reporting Committee” (PERT) and is the PERT representative to the California Cancer Registry/California Society of Pathology (CCR/CSP) project to automate acquisition of cancer case information by the registry. In addition to her role with the California Cancer Registry Data Consortium Project, she is leading a committee within the Texas Society of Pathologists to assess the potential for automating cancer case reporting in Texas.

**Michael D. Feldman, M.D., Ph.D.**

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My professional interests revolve around the development, integration and adoption of information technologies in the discipline of Pathology. One of my main areas of interest within this broad discipline has been in the field of digital imaging. We have been exploring pathology imaging on several fronts including interactions between pathology/radiology (High resolution MRI imaging of prostate cancer and breast carcinoma), development and utilization of computer assisted diagnostic algorithms for machine vision in prostate and breast cancer (Collaboration with Dr. Anant Madhabushi Rutgers). Application of multispectral imaging for the analysis of multicolor immunohistochemistry and immunofluorescence and the development of a quantitative system for scoring and analyzing at a cytometric level, multicolor immunostaining on surgical pathology slides. The efforts have been recognized by the national funding agencies which have awarded our group an SBIR and RO1 from NIH, Synergy award from DOD as well as two industry sponsored projects.

**Jeffrey L. Fine, M.D.**

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Dr. Fine is an expert on explainable AI (xAI) and its applications in computer assisted diagnosis for pathologists (pCAD) and computational pathology. He also has interest in hyperplexed fluorescence images, in vivo and ex vivo microscopy (IVM and EVM), automation and other informatics topics. Dr. Fine maintains a busy clinical practice in breast and gynecologic pathology at UPMC Magee-Womens Hospital. Dr. Fine is a co-founder of SpIntelli, an xAI company that was recently spun off from the University of Pittsburgh.

**Thomas J. Gniadek, M.D., Ph.D.**

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Tom Gniadek did his undergraduate and graduate work at Yale, majoring in Chemistry and completing a MD PhD. He started programming as an undergraduate and worked as a software developer. He completed residency at The Johns Hopkins Hospital in Anatomic and Clinical Pathology, then fellowships in Transfusion Medicine and Medical Microbiology at University of Minnesota and Mayo Clinic. He currently works in Evanston IL.

**Metin Gurcan, Ph.D.**

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Dr. Metin Gurcan is Director of 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 (csl.wakehealth.edu/CIALab/). 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. From 1999 to 2001, he was a postdoctoral research fellow in the Department of Radiology at the University of Michigan, Ann Arbor. Following his postdoctoral work, he worked as a senior researcher and a product director at a high-tech company, specializing in computer-aided detection and diagnosis of cancer from radiological images. 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 the author of over 200 peer-reviewed publications, book chapters and was awarded three patents for his inventions in medical image analysis. He is the recipient of several awards including the British Foreign and Commonwealth Organization Award, NCI caBIO 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. As an internationally recognized researcher and educator, he is a Fellow of SPIE and senior member of IEEE and AMIA. He currently serves on the editorial boards of Journal of Pathology Informatics and Journal of Medical Imaging; and organizes the Pathology Informatics Histopathological Image Analysis (HIMA) workshop.

Steven Hart, Ph.D.
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Dr. Hart received his Ph.D. in Pharmacology from the University of Kansas Medical Center in 2011. Shortly after, he joined the Division of Biomedical Statistics and Informatics at Mayo Clinic. Dr. Hart has earned the respect and admiration of his colleagues for his strong work ethic and knowledge of computational biology. He was instrumental in building computational pipelines for DNA sequence analysis in both research and clinical settings, software platforms for interpreting complex and multimodal data, and is a staunch supporter of open-access data and licensing. His role in the Division has been that of a Collaborative Scientist - one who brings advanced analytical capabilities to support large ongoing research programs.

Douglas J. Hartman, M.D.
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Dr. Douglas J. Hartman is the Director of the Division of Pathology Informatics at the University of Pittsburgh Medical Center (UPMC) and a gastrointestinal pathologist. He is board certified in anatomic and clinical pathology and clinical informatics. He has been implementing digital pathology for primary sign-out as well as for telepathology at UPMC. Dr. Hartman is also the director of the UPMC Image Analysis lab and has developed and implemented image analysis for clinical reporting. He has participated in implementing two different digital pathology solutions for routine anatomic pathology. Dr. Hartman’s research in informatics is varied but focuses on practical application of informatics. He has published on informatics topics and given national and international talks based on his informatics work.

Itai Hayut, M.Sc.
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Itai Hayut is the CEO and co-founder of Scopio Labs Ltd., a startup company developing a novel digital microscopy platform that uses advanced computational photography techniques in order to perform imaging and analysis of microscopy samples. He is also a founder of Guidelink Medical Ltd, a medical technology company that has developed an FDA-approved device for Tracheal Intubation. Itai has academic background in physics and neuroscience and he is also a graduate of Singularity University summer program at NASA Ames Research Center in the Silicon Valley.

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Daniel Herman practices clinical pathology at the University of Pennsylvania, where he directs the Endocrinology laboratory at the Hospital of the University of Pennsylvania. He completed his MD and PhD degrees at Harvard Medical School and trained in Clinical Pathology at the University of Washington. His current clinical practice, in addition to clinical chemistry, includes leading informatics projects to make better use of existing laboratory data in the form of live operational dashboards, test utilization reports, and identification of missing patient diagnoses. His research group has been developing EHR-based methods to improve population health screening, focused recently on improving population hypertension management by identifying patients with undiagnosed primary aldosteronism. He is also interested in the intersection of pathology and policy and currently serves as College of American Pathology State Issue Advisor for Pennsylvania.
Jeffrey B. Hodgin, M.D., Ph.D.
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Jeffrey B. Hodgin, M.D., Ph.D. completed his undergraduate education at the University of North Carolina in Chapel Hill, receiving a B.S. in Chemistry in 1992. After graduation, he worked in the laboratory of Drs. Oliver Smithies and Nobuyo Maeda and was involved in several projects employing gene targeted mice to investigate the genetics of essential hypertension. The experience sparked an interest in medicine and he continued his education at the UNC School of Medicine. Later, he decided to pursue a more research-oriented career and returned to the Smithies-Maeda lab as a graduate student in the Department of Molecular and Cellular Pathology, receiving a Ph.D. in 2002 and MD in 2003. His thesis work, titled "Molecular Mechanisms of Atheroprotection by 17 beta-estradiol," employed a genetic and pharmacologic study design to the molecular mechanisms of estrogen-mediated inhibition of atherosclerosis in mice. Dr. Hodgin completed residency training in Anatomic Pathology at Columbia University, New York, in 2006 and a Nephropathology Fellowship at Columbia University under the tutelage of Dr. Vivette D’Agati in 2008. As a National Kidney Foundation Research Fellow during the second fellowship year, he investigated genome-wide expression profiling of laser-captured glomeruli in formalin-fixed, paraffin-embedded renal biopsies of FSGS patients found in the extensive archives at Columbia. His experience at Columbia solidified a desire to focus his research and clinical career on diseases of the kidney, specifically glomerular diseases. Since joining the Department of Pathology at the University of Michigan in July of 2008, and working with his mentor Dr. Matthias Kretzler, Dr. Hodgin has added a systems biology approach to his interests and expertise. He now has more than 35 publications in both basic and translational research areas and has been funded by NIH-NIDDK and the ASN-Nephcure Foundation.

Stephan Kadauke, M.D., Ph.D.
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After completing high school in Germany, Stephan crossed the Atlantic to study in New York City. From there, he went on to complete Penn’s Medical Scientist Training Program (MSTP). In his Pathology residency, Stephan was shocked by the lack of informatics education. So he developed a course in data science specifically tailored for physicians and other health care professionals who deal with clinical data, and he’s teaching this course at the Perelman School of Medicine at the University of Pennsylvania.

Stephan works at CHOP where he serves as the Assistant Director of the Cell and Gene Therapy Lab. He is also a part of the new Division of Pathology Informatics where he is promoting physician informatics education.

Veronica Klepeis, M.D., Ph.D.
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Veronica Klepeis, M.D., Ph.D. is an Assistant in Pathology at Massachusetts General Hospital in Boston where she is heading up implementation of structured data capture in anatomic pathology. Her main informatics interests are focused in anatomic pathology and include data quality, structured data, whole slide imaging and digital image analysis. She is a member of the College of American Pathologist (CAP) Pathology and Electronic Reporting (PERT) Committee. Dr. Klepeis is board certified in Anatomic and Clinical Pathology, Hematopathology and Clinical Informatics.

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Dr. Krishnan is a board certified anatomic and pediatric pathologist. He has been practicing primarily as a pediatric pathologist and hematopathologist since 2010, at Dell Children’s Medical Center in Austin, TX. He has also served as the laboratory medical director since 2013 and the network director for flow cytometry for Ascension Seton Family of Hospitals since 2011.

His interests outside of pathology include HTML/javascript programming and running his website, Hematogones.com, which is a collection of web applications for practicing pathologists and trainees.

George Lee, Ph.D.
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George Lee received his PhD in Biomedical Engineering at Rutgers University and has over 10 years of expertise in the areas of digital pathology, machine learning, and clinical oncology. He has authored over 30 peer-reviewed manuscripts
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Jonathan T.C. Liu received his B.S.E. degree from Princeton University in 1999, and an M.S. and Ph.D. degree in mechanical engineering from Stanford University in 2000 and 2005, respectively. He was a postdoctoral fellow in the department of electrical engineering (Ginzton Labs) and the Molecular Imaging Program at Stanford (2005–2009), and was later appointed as an instructor within the Stanford University School of Medicine (2009–2010). From 2010 to 2014, Jonathan was an assistant professor of biomedical engineering at SUNY Stony Brook. He is currently the Bryan T. McMinn endowed associate professor of mechanical engineering at the University of Washington in Seattle, with an adjunct appointment in the pathology department at the UW School of Medicine. Jonathan’s laboratory for molecular biophotonics develops optical strategies for improving the diagnosis and treatment of diseases, including the development of miniature in vivo microscopes and tabletop “open-top” light-sheet microscopes for slide-free nondestructive 3D pathology.

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Dr. Anant Madabhushi is the Director of the Center for Computational Imaging and Personalized Diagnostics (CCIPD) and the F. Alex Nason Professor II in the Department of Biomedical Engineering at Case Western Reserve University. He is also a member of the Case Comprehensive Cancer Center and a Research Health Scientist at the Louis Stokes, Cleveland Veterans Administration Medical Center.

Dr. Madabhushi has authored over 150 peer-reviewed journal publications, over 180 conferences papers, and delivered over 240 invited talks and lectures both in the US and abroad. He has over 75 patents either issued or pending in the areas of medical image analysis, computer-aided diagnosis, and computer vision. His research work has received grant funding from the National Cancer Institute (NIH), National Science Foundation, the Department of Defense, private foundations, and from Industry. He is also the co-founder of Ibris Inc. a startup company focused on developing image based assays for breast cancer prognosis.

Patrick Mathias, M.D., Ph.D.

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Patrick Mathias, MD, PhD, is the Associate Medical Director of the Informatics Division in the Department of Laboratory Medicine at the University of Washington School of Medicine. He completed his MD and PhD in Bioengineering at the University of Illinois in Urbana-Champaign, followed by a clinical pathology residency and a clinical informatics fellowship at the University of Washington School of Medicine. His interests include developing data science and analytics as a core competency to improve clinical lab operations and laboratory stewardship, and applying clinical informatics approaches to mitigate laboratory-associated diagnostic errors. He is interested in developing and improving programming and data science education across all levels of pathology practice.

David McClintock, M.D.

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David McClintock, MD, is an Associate CMIO of Michigan Medicine (Pathology Informatics), Director of Digital Pathology, Associate Director of Pathology Informatics and Associate Professor at the University of Michigan. His primary clinical interests comprise operational pathology and clinical laboratory informatics including workflow analysis, Laboratory Information System (LIS) implementation/optimization, and improved integration of pathology and clinical laboratory data within the EHR and clinical research data warehouses. His research interests include understanding the role and effects of whole slide imaging and...
digital pathology within the clinical laboratories, the effects of computational pathology and machine learning on diagnostic testing and patient outcomes, and how to enable laboratory data analytics in order to provide both pathologists and clinicians opportunities to better optimize patient care and clinical decision-making. He is currently serving as the Past-President of the Association of Pathology Informatics for 2019.

**Richard Moldwin, M.D., Ph.D.**

*Lead Physician Informaticist, College of American Pathologists*

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Dr. Moldwin has worked in biomedical informatics for over 30 years. His clinical training was in pediatric hematology/oncology, and his biomedical research focused on T cell immunology, leukemia, and stem cell transplantation. His past bioinformatics projects have involved computation of protein structure, development of software for immunologic assay analysis, creation of databases for clinical management and biospecimen research, and the creation of clinical content management software. Since 2006, he has worked at the College of American Pathologists (CAP) on the development of interoperable data representations for the management of cancer data, and he leads the development and implementation of CAP’s “electronic Cancer Checklists.” As part of the effort to encourage widespread adoption of the eCC content and interoperability model, he works closely with collaborators from AJCC, ASCO, CDC, HL7/FHIR, IHE, NAACCR, NCI, NLM, ONC, and others, including many EHR vendors. eCC implementations have been very successful in Ontario, and further eCC implementation work is now focused on the state of California, with a strong emphasis on streamlining data collection processes for cancer registries. The eCC team has been working with ONC and others to develop a closely-related interoperability model called “Structured Data Capture.”

**Amrom Obstfeld, M.D., Ph.D.**

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Amrom Obstfeld MD, PhD, is the Medical Director of the Division 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.

**Varsha Parekh, BSc, Engineering, PMP**

*Senior Technical Manager, Structured Data Team, College of American Pathologists*

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Varsha Parekh has worked in informatics for over 15 years, most recently serving as the Senior Technical Manager for the Structured Data Team at the College of American Pathologists (CAP). Since arriving at the CAP, she has worked on the development of SNOMED taxonomy, ICD code support, and LOINC mapping. She is currently supporting the development of interoperable data representation for cancer reporting data management, managing the technical processes to produce the CA “electronic Cancer Checklists (eCC).”

**Jordan Olson, M.D.**

*Director, Laboratory Preanalytics, Geisinger Medical Laboratories*

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After growing up in northern Wisconsin, Dr. Jordan Olson did his undergraduate and medical schooling at the University of Wisconsin–Madison. He then went to Penn State Hershey Medical center and became fascinated with system-level changes and informatics. The Penn State Department of department of Pathology and Laboratory medicine gave him the tools to work on system-wide issues. Dr. Olson completed a residency in clinical pathology and a fellowship in transfusion medicine while at Penn State Hershey Medical Center, focusing on informatics-related issues.

After residency, Dr. Olson joined the Geisinger Health system, where he is the Division Director of Pathology informatics and Clinical Pathology Quality. He is also the medical director of Geisinger Bloomsburg Hospital Laboratory and Geisinger Shamokin Hospital Laboratory. Dr. Olson performs clinical work on the transfusion medicine and apheresis services. He focuses on laboratory quality improvement and efficiency through informatics tools and automation. He also is heavily involved in developing reflexive testing algorithms to add value for clinicians, developing and maintaining the laboratory formulary, and improving laboratory utilization to ensure the patient gets the best test the first time while minimizing waste.
Varsha is currently spearheading development efforts for a Single Source Product (SSP) to produce the CAP Cancer Protocols and eCCs from the same database. The SSP will speed up the content production and release cycle, prevent and reduce errors, and avoid duplicative manual efforts. In addition, she is leading multiple software development projects including development and maintenance of the eCC XML Comparator, widely used by vendors integrating the eCC into their LIS, and the SDC Reference Tool hosted on CAP website. This tool is used during IHE Connectathon to test SDC technology for representing technology-agnostic forms using SDC schema definition XML format.

In addition, Varsha collaborates with standard setters and stakeholder organizations such as the CDC, IHE, ONC, CCO and others, including several LIS, EHR, and middleware vendors, as part of the team’s effort to encourage widespread adoption of the eCC content, as well as an interoperable implementation and data exchange model.

Joseph Rudolf, M.D
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Joseph Rudolf, MD is the Director of Laboratory Medicine and Pathology Informatics in the Department of Laboratory Medicine and Pathology at the University of Minnesota in Minneapolis, Minnesota. He earned his medical degree (2012) from the University of Washington School of Medicine in Seattle, Washington. He completed his residency training in Clinical Pathology (2015) and fellowship in Clinical Informatics (2017) at the Massachusetts General Hospital in Boston, Massachusetts. His clinical and research interests focus on the intersection of informatics and clinical operations including clinical decision support, utilization management, and reporting and analytics. He is also passionate about clinical process improvement and initiatives to support quality and safety.

Manuel Salto-Tellez, MD-LMS, FRCPath, FRCPI
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Professor Manuel Salto-Tellez (MD-LMS, FRCPath, FRCPI) is the Chair of Molecular Pathology at Queen’s University Belfast, and the Lead of the Queen’s Precision Medicine Centre of Excellence.

By January 2019, Prof Salto-Tellez was author or co-author of more than 260 internationally peer-reviewed articles in translational science, molecular pathology and diagnostics. He has published a similar number of abstracts in international conferences, and is editor or contributor to some of the key textbooks of pathology and oncology. He studied Medicine in Spain (Oviedo), Germany (Aachen) and The Netherlands (Leiden). He specialized in Histopathology in the UK (Edinburgh and London) and in Molecular Pathology in USA (Philadelphia). For more than 10 years he worked at the National University of Singapore and its National University Hospital, where he was associate professor, senior consultant, director of the Diagnostic Molecular Oncology Centre, Vice-dean for Research and senior scientist at the Cancer Research Institute.

Prof Salto-Tellez serves in committees associated with CRUK, NICE and REF, among others. He holds more than £15M in competitive grant funding, including the new Precision Medicine Centre of Excellence, a visionary development aiming to redefine the process of biomarker development and test adoption in the UK and globally.

Kinjal Shah, M.D.
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Dr. Kinjal Shah is an Assistant Professor and Associate Residency Program Director in Department of Pathology at University of Tennessee Health Science Center. She trained in Anatomic and Clinical Pathology Residency at the University of Miami. She completed her fellowship in Transfusion Medicine at Emory University. She has a special interest in applying informatics to improve physician practices surrounding selection and transfusion of blood products to ultimately improve patient outcomes.

Ross W. Simpson, M.D.
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Ross Simpson, MD is a general pathologist and director of laboratory informatics at Methodist Hospital –Park Nicollet in St. Louis Park Minnesota for over 30 years. He is a long-term member of the CAP PERT committee and has been involved in the ONC Structured Data Capture initiative. He is boarded in Anatomic and Clinical Pathology, and Clinical Informatics.
Dr. Ila Singh serves as Chief of Laboratory Medicine in the Department of Pathology at Texas Children’s Hospital and as Professor of Pathology & Immunology at Baylor College of Medicine. Dr. Singh completed her M.D. at the University of Bombay, and her Ph.D. at Yale University. She served as the Jane Coffin Childs Fellow at Stanford University and completed her Clinical Pathology residency training at Columbia University Medical Center in New York City. Dr. Singh has served as Assistant Professor and Attending at Columbia University Medical Center and New York Presbyterian Hospital; as Associate Professor and Medical Director at University of Utah and ARUP Laboratories, and as tenured professor at the Icahn School of Medicine at Mount Sinai and the Vice Chair of Clinical Pathology and Medical Director of the Clinical Laboratories for the Mount Sinai Health System.

Dr. Singh has two major research interests. The first is her focus on laboratory test stewardship, and on the mechanisms used to optimize the type and frequency of physician test orders to achieve better clinical outcomes and reduce waste. Her second interest is clinical informatics and the use of machine learning to determine key drivers in healthcare.

Dr. Singh leads TRUU-Lab, a national initiative to give rational, easily understood, consensus names to lab tests. She is board-certified in Clinical Pathology and in Clinical Informatics.

Dr. Ila Singh
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Dr. S. Joseph Sirintrapun is the Director of Pathology Informatics at Memorial Sloan Kettering Cancer Center and an Assistant Attending and member of the Warren Alpert Center for Computational Pathology. Dr. Sirintrapun is board certified in Anatomic and Clinical Pathology and Clinical Informatics. In addition to his work in informatics, he practices surgical pathology specializing in genitourinary tumors. Dr. Sirintrapun is an active member of API for over ten years, having served many years on the Membership Committee. He currently serves on the College of American Pathologists Pathology Electronic Reporting Committee and on the American Society of Clinical Pathology Pathology Informatics Committee. He is also section editor of Diagnostic Pathology.

Dr. S. Joseph Sirintrapun
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Dr. Sirintrapun’s research interests are in anatomic pathology informatics, specifically image digitization, telepathology, data interoperability, and systems and network analysis. He is dedicated to better understanding for the cognitive and social impacts of technology on clinical practice. His strength and focus are on the “operationalization”, translating innovations in digital pathology and computational pathology to practice. His efforts have resulting in the large scale clinical utilization of digital glass slides and telecytology at his institution. Dr. Sirintrapun is also engaged in the cultivation of a medical and technological workforce to propel pathology informatics and computational pathology.

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Dr. Sorace is a retired Health and Human Services medical officer with over 10 years of experience in the Office of the Assistant Secretary for Planning and Evaluation (ASPE) at HHS. His research interests at ASPE included the role of big data in biomedical research as well as the development of methods to analyze the interoperable exchange of health information. Dr. Sorace has served as HHS’s Standards Executive for the Interagency Committee on Standards Policy and as staff to the Standards Subcommittee of the National Committee of Vital and Health Statistics. Before joining ASPE, he worked at the Centers for Medicare and Medicaid Services as clinical advisor for the Doctors Office Quality Information Technology (DOQ-IT) project. This $100 million and 3-year project was the first in the nation to develop implementation strategies to foster the use of electronic healthcare records in the physician office setting. Prior to joining HHS Dr. Sorace was a practicing pathologist at the Baltimore VA Medical Center and on the faculty of the University of Maryland Department of Pathology.

James Sorace
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Melissa P. Upton
President, American Society for Clinical Pathology, Emerita Professor of Pathology, University of Washington
SEATTLE, WA | mupton@uw.edu

Dr. Upton earned a BA in history at the University of Rochester and her MD at Northwestern University Medical School, where she completed anatomic pathology residency. Her fellowships included pediatric pathology at the Children’s Hospital in Boston, and a 2-year Nakasone Research fellowship in pathology at the National Cancer Research Center in Tokyo, studying immunohistochemistry and molecular pathology.

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Board certified in Anatomic Pathology and Cytology, Dr. Upton has practiced surgical pathology, cytopathology, and autopsy pathology, with focused specialty practice in GI, liver, and pancreatic pathology. From 1991-2002, she directed the autopsy service and forensic pathology fellowship program at Beth Israel Deaconess Medical Center in Boston, Massachusetts. In 2002 she joined the University of Washington in Seattle, where roles have included Associate Directorship of Anatomic Pathology and Directorships of the GI and Hepatic Pathology Service, the Pathology Residency Program, and the GI and Hepatic Pathology Fellowship. As Emeritus Professor of Pathology, she continues to practice part-time.

Christopher L. Williams, M.D.

Director of Pathology Informatics, University of Oklahoma Health Sciences Center

OKLAHOMA CITY, OK | christopher-williams@ouhsc.edu

Dr. Chris Williams received a B.S. and M.S in Electrical and Computer Engineering from Oklahoma State University in Stillwater, Oklahoma, in 2003 and 2004, respectively. Prior to starting medical school, he worked as an Electronics Engineer (civilian) at Tinker Air Force Base in Oklahoma City, Oklahoma. Dr. Williams received an M.D. from University of Oklahoma College of Medicine in Oklahoma City in 2011 and completed training in Clinical Pathology at OU Medical Center in 2014. Dr. Williams joined the University of Michigan Department of Pathology in July 2015 for fellowship training in Clinical Informatics. Upon completing his CI Fellowship in 2017, he returned to OUHSC to lead informatics initiatives within the department of pathology and across campus. He is board certified in Clinical Pathology Clinical Informatics.

Keluo Yao, M.D.

Clinical Lecturer, Department of Pathology, Michigan Medicine/University of Michigan

ANN ARBOR, MI | keluoy@med.umich.edu

Dr. Keluo Yao always had a strong interest in computer science and had a brief career in the technology industry prior to his medical training. He received his MD from Tufts University School of Medicine and completed his anatomic and clinical pathology residency training at the Ohio State University. Currently completing his pathology informatics training, Dr. Yao is also a board certified cytopathologist with a strong interest in developing image analysis application for cytopathology. He will be joining the University of California, San Francisco, to facilitate the pathology department’s digital pathology transition.
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J. Mark Tuthill, M.D.
Division Head, Pathology Informatics
Henry Ford Health System, Detroit, MI
API MOBILE APP INSTRUCTIONS

The Association for Pathology Informatics (API) Mobile app is now available on the Apple iTunes Store, Google Play and HTML5.

Pittsburgh – May 21, 2018 – Available now! The FREE API Mobile app is available for iPhone, Android, and HTML5 users. It allows both API members and non-members to view details about the Association for Pathology Informatics and the Pathology Informatics Summit, as well as view details about other API-sponsored events and useful resources.

The API Mobile app allows API members access to the API member directory, API listserv and API message boards. Members also have the ability to update their membership profile, view their digital API membership card, view job postings, view/register for events, and more!

The ability to view/register for events and view/download the PI Summit schedule, program, and meeting handouts are available to ALL users!

Requirements: Android 4.0.3 and up | iOS 9.0 or later (compatible with iPhone, iPad, and iPod touch | Works on any html5-compliant mobile device. Android, Apple(iOS), BlackBerry, Windows Phone (if html5 compliant), Symbian, Web OS, and More!

API MOBILE APP LEAD RETRIEVAL FEATURE

The API mobile app has a lead retrieval feature that will allow current API members and qualifying exhibitors at PI Summit to scan attendee badges and collect important contact information, add notes, and export lead information.

1. Download the API mobile app from the Apple iTunes Store or Google Play.
2. Open the mobile app and log in with your username/password

   NOTE: PI Summit 2018 vendors who are not already API members were provided with a limited API membership type called PI Summit Vendor that provides TWO (2) company representatives access to the lead retrieval feature. ALL API members have access to this feature with their paid API membership.

3. Click on the Members Only button and select the menu item Lead Retrieval.
4. On the Lead Retrieval page you have the option to Scan QR Code, View Current Leads or Export Lead Information.
5. Press Scan QR Code to scan the attendee badge QR code
6. After scanning the QR code, you will see the attendee’s information from their registration record with a message that reads Lead scanned and saved successfully. From there you can Edit Lead Information, Scan Another Code, or go Back to Lead Index.
Press the **View Current Leads** to edit an attendee’s information or add notes and ratings about the attendee.

8. To export your leads click the **Export Lead Information**, and it will generate a csv file that will be delivered directly to the email address in their member (or vendor) account.

**OTHER KEY FEATURES**

**API members:** Access your member profile, access the member directory, view your digital membership card, submit a classified ad or press release, view job postings, and access the member forums and the API listserv.

**API members and PI Summit vendor members:** Access the lead retrieval feature.

**Publicly available features:** View and register for events and view meeting schedules and handouts (where available).
TARGET AUDIENCE

Pathology Informatics 2019 will have broad appeal to healthcare professionals as have all previous meetings. First and foremost, the more than a third of the audience will be pathologists with about a third of this third being pathology trainees. The next largest component, about 40%, will be lab professionals, Ph.D.’s and medical technologists, with responsibility for managing LISs. The remainder will be hospital and pathology managers tasked with purchasing and maintaining LISs as well as LIS and HIS vendor whose employees attend the conference to gain knowledge about progress in the field.

CREDIT CME ACCREDITATION AND CREDIT DESIGNATION STATEMENT

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint providership of the American Society for Clinical Pathology (ASCP) and the Association of Pathology Informatics (API). The ASCP is accredited by the ACCME to provide continuing medical education for physicians.

The ASCP designates this live activity for a maximum of 17 AMA PRA Category 1 Credit(s)™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

This activity meets requirements for the American Board of Pathology's Continuing Certification (CC) Part II Lifelong Learning and Self-Assessment. This live activity is designated for a maximum of 13 SAMs CME credits.

FACULTY AND PLANNING COMMITTEE DISCLOSURE

Faculty and Planning Committee for this activity have been required to disclose all relationships with any proprietary entity producing health care goods or services, with the exemption of non-profit or government organizations and non-health care related companies.

No relevant financial relationships with commercial entities were disclosed by:

- John Blau, MD
- Sandra Camelo–Piragua, MD
- W. Scott Campbell, MBA, PhD
- Bryan Dangott, MD
- Scott Doyle, PhD
- Mary Edgerton, MD, PhD
- Bruce Friedman, MD
- Thomas Gniadek, MD
- Daniel Herman, MD, PhD
- Jeffrey Hodgin, MD, PhD
- Stephan Kadauke, MD, PhD
- Veronica Klepeis, MD, PhD
- Jonathan T. C. Liu, PhD
- Anant Madabhushi, MD, PhD
- Patrick Mathias, MD, PhD
- Richard Moldwin, MD, PhD
- Amrom Obstfeld, MD, PhD
- Varsha Parekh, BSc,
- Engineering, PMP
- Anil Parwani, MD, PhD
- Joseph Rudolf, MD, PhD
- Kinjal Shah, MD
- Ross Simpson, MD
- Ila Singh, MD
- S. Joseph Sirintrapan, MD, FASCP, FCAP
- J. Mark Tuthill, MD
- Chris Williams, MD
- Keluo Yao, MD

The following presenters have indicated relationships that have been reviewed and commercial conflicts of interests resolved. In all cases, it was determined that the relationship did not relate to the educational assignment or that the commercial entity does not produce, market, re-sell or distribute health care goods or services consumed by, or used on patients.

The following information was disclosed:

- Jason Baron, MD | Commercial Interest: Roche Diagnostics | Role: Consultant | Compensation: Consulting Fee
- Toby Cornish, MD, PhD | Commercial Interest: Leica | Role: Advisory Board | Compensation: Consulting Fee
- Michael Feldman, MD, PhD | Commercial Interest: Philips DPS | Role: Consultant | Compensation: Consulting Fee
- Douglas Hartman, MD | Commercial Interest: Philips | Role: Speaker | Compensation: Honorarium
- Chandra Krishnan, MD | Commercial Interest: Google | Role: Consultant | Compensation: Consulting Fee
PLAY VENDOR BINGO!
YOU COULD WIN ONE OF THESE PRIZES:

- 1 PlayStation 4 Console 1TB Slim Edition
- 3 FREE Registrations to PI Summit 2020
- 3 FREE 2019 API Memberships (July 1, 2019 to June 30, 2020)
- 3 Waived JPI Author Fees
**EXHIBITOR BALLROOM HOURS:**

**TUESDAY, MAY 7**
- 10 a.m. – 12 p.m. OPEN (snack break 10:20 – 11:20 a.m.)
- 12 – 1 p.m. Lunch Served
- 1 – 5 p.m. OPEN (snack break 3:30 – 4:30 p.m.)
- 5:30 – 7:30 p.m. Opening Reception

**WEDNESDAY, MAY 8**
- 7 – 8 a.m. Breakfast served
- 8 a.m. – 12 p.m. OPEN (snack break 10:20 – 11:20 a.m.)
- 12 – 1:30 p.m. Lunch Served
- 1:30 – 4:30 p.m. OPEN (snack break 3:30 – 4:30 p.m.)
- 4:30 p.m. Closed/Break down

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**MAP OF EXHIBITORS**

- **Abbott Informatics**
- **Sectra Digital Pathology PACS**
- **Sunquest Information Systems, Inc.**
- **Voicebrook**
- **Sakura Finetek USA, Inc.**
- **Visiun, Inc.**
- **Caliber ID**
- **Visiopharm**
- **Roche Diagnostics**
- **Leica Biosystems**
- **Hamamatsu**
- **Digital Pathology Association**

**FOOD & BEVERAGE SERVICE**

**HALLWAY ENTRANCES**

**EXHIBITOR REGISTRATION**

**PAPER POSTER PRESENTATIONS IN MAIN FOYER**

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**DERM FOCUS HALLWAY**

- **S1**
- **S2**
- **S3**
- **S4**
- **S5**
- **S6**
- **S7**
- **S8**
- **S9**
- **S10**
- **S11**
- **S12**
- **S13**
- **S14**
- **S15**

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**EXHIBITOR REGISTRATION**

**MAIN ENTRY FROM FOYER**

**PAPER POSTER PRESENTATIONS IN MAIN FOYER**

**HALLWAY ENTRANCES**

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**EXHIBITOR REGISTRATION**

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Your chance to further your understanding of digital pathology technology fundamentals.

**API Digital Pathology and AI Workshop 3.0**

**December 13-14, 2019 • UPMC Pathology Pittsburgh**

Topics covered include: the development of RFPs for the digital pathology equipment, improving surgical pathology workflow on the basis of LEAN principles, and integration of the new technology with current LISs and automated equipment. Registration limited to 80 on a first-come, first-served basis.

Registration for attendees and sponsors opens June 1, 2019.

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**2020**

May 18-21, 2020

**2021**

May 3-6, 2021

**NEW LOCATION**

David L. Lawrence Convention Center and Westin Convention Center Hotel

**PITTSBURGH, PA**