Global Engage

10 YEARS ANNIVERSARY

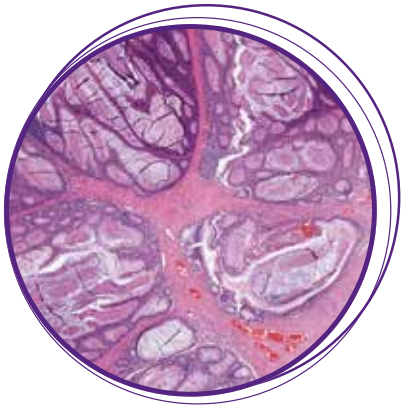
10TH DIGITAL PATHOLOGY & AI CONGRESS: USA

UTILIZING DIGITAL PATHOLOGY & AI TO ADVANCE PATHOLOGY PRACTICE, ENABLE ENHANCED PATIENT CARE AND FURTHER DRUG DISCOVERY

SAN DIEGO, USA

Marriott La Jolla

May 7-8 2024



#DigiPathUSA

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WARM WELCOME

Global Engage

Global Engage is pleased to announce the **10th Digital Pathology & AI Congress**, which is confirmed to take place at its new venue on 7-8 May 2024 at the La Jolla Marriott in San Diego.

This world-renowned event regularly attracts over 325+ attendees. With 6 tracks focusing on the topics below, there is ample content to learn from top experts, network and broaden your connections and, should you wish, showcase your work in the poster presentation sessions.

- 65 strong senior-level speaker faculty
- Exhibition room showcasing the latest technology
- Expert-led roundtables and interactive panel sessions
- Unique academic and pharma/biotech joint focus
- Poster presentations/ competition to promote scientific development
- Over 7 hours of networking time
- A fantastic reputation as the number one Digital Pathology & AI series worldwide

We are also holding our American Spatial Biology Congress at the same venue on 9th & 10th May 2024. Find out more about the event **here**. Contact maria@globalengage.co.uk for a discounted package to attend both meetings

CONFERENCE SYNOPSIS

	Track 1	Track 2	Track 3
Day 1	AI & Digital Image Analysis	Digital Pathology Implementation, Strategy & Technology	Pharma/Biotech Case Studies
Day 2	Computational Pathology & AI	Applications and Research Case Studies	Pharma/Biotech Case Studies

Are you:-

- New to DP and looking to invest and optimise the business case for digital pathology?
- Interested to learn how others have successfully implemented DP & AI
- Wanting to overcome difficulties of going digital such as workflow issues, LIMS and AI integration or maximizing digital efficiency of your lab
- An experienced user looking to uncover the latest advances, developments and case studies in the field as well as preparing yourself for what is coming next

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CONFIRMED SPEAKERS

ULYSSES G. J. BALIS
Associate Chief Medical Information Officer, A. James French Professor of Pathology Informatics, University of Michigan

MUSTAFA YOUSIF
Assistant Professor and Director of Digital Pathology, University of Michigan

JASON HIPP
Chief Digital Innovation Officer, Mayo Collaborative Services, Mayo Clinic

SENIOR REPRESENTATIVE
Corista

RICHARD LEVENSON
Professor and Vice Chair for Strategic Technology, Department of Pathology and Laboratory Medicine, UC Davis

MARK GUSTAVSON
Senior Director, Oncology Translational Medicine, AstraZeneca

GIOVANNI LUJAN
Director of Digital and Computational Pathology, The Ohio State University

DANIEL G. RUDMANN
Senior Director, Digital Toxicologic Pathology, Safety Assessment, Charles River

ZOLTAN LASZIK
Director of Digital Pathology, UCSF

CHIH-HONG WANG
Operations Manager, Pathology/DSP, Regeneron Pharmaceuticals, Inc

SUZANNE M DINTZIS
Professor, Department of Laboratory Medicine and Pathology, University of Washington School of Medicine

HATEF MEHRABIAN
Research Scientist, Computational Pathology Group, Gilead

ORLY ARDON
Director Digital Pathology Operations and Assistant Member, Memorial Sloan Kettering Cancer Center

SRIPAD RAM
Digital Pathology and Image Analysis Group Lead, Drug Safety R&D Pfizer Inc.

DANIEL G. RUDMANN
Senior Director, Digital Toxicologic Pathology, Safety Assessment, Charles River

HARSH THAKER
Vice Chair, Digital and Integrative Pathology; Director, Anatomic Pathology, University of Texas Medical Branch – Galveston

ERIO BARALE-THOMAS
Scientific Associate Director, Pathobiology, DPDS – Preclinical Sciences & Translational Safety, J&J Innovative Medicine

EDER LAGEMANN
Global Director of Digital Pathology, KLAS Research

NATASHA DARRAS
MD, Director, Digital Pathology & Innovation, Oncology & Cell Therapy Clinical Biomarker Sciences, Takeda Pharmaceuticals

HOOMAN RASHIDI
Professor & Associate Dean of AI, University of Pittsburgh School of Medicine, Executive Director of Computational Pathology & Ai Center of Excellence (CPACE), UPMC

FABIAN HEINEMANN
Chapter lead IT Data Science and Head Central Data Science EMEA, Boehringer Ingelheim

SAVITRI KRISHNAMURTHY
Deputy Division Head and Director for Clinical Trials Research and Development, MD Anderson Cancer Centre

BRITTANY DUGGER
Associate Professor, Department of Pathology and Laboratory Medicine, UC Davis

DAVID A. GUTMAN
Assistant Professor, Biomedical Informatics, Emory University

RADHA KRISHNAN
Executive Director & Clinical Pathology Lead, Merck Sharp Dohme

LAURA DILLON
Vice President, Translational Medicine & Bioinformatics, Incendia Therapeutics

JOSHUA J. LEVY
Director of Digital Pathology Research, Assistant Professor of Pathology and Computational Biomedicine, Cedars Sinai Medical Center

CHAO-HUI HUANG
Senior Principal Scientist, Quantitative Image Analysis, Pfizer

PRITI LAL
Professor, Pathology and Laboratory Medicine, Director, GU Pathology, University of Pennsylvania

ALBERT JUAN RAMÓN
Principal Scientist, Johnson & Johnson

SUNIL SINGHAL
Principal Consultant, Synergess LLC

COREY ARNOLD
Professor and Vice Chair of Research, Radiology; Professor, Pathology, Bioengineering, and Electrical & Computer Engineering, UCLA

JANA LIPKOVA
Assistant Professor, Department. of Pathology and Molecular Medicine, University of California, Irvine

SAM SEYMOUR
Director of Product, Paige

W. DEAN WALLACE
Professor of Pathology, Keck School of Medicine of USC

EVITA SADIMIN
Chief, Division of Pathology Informatics and Data Scienc, Department of Pathology, City of Hope National Medical Center

ARVIND RAO
Associate Professor, Computational Medicine and Bioinformatics, University of Michigan

J. MARK TUTHILL
Division Head, Pathology Informatics, Henry Ford Health System

SHAHLA MASOOD
Professor and Chair, Department of Pathology and Laboratory Medicine, University of Florida College of Medicine – Jacksonville

MATHIEU MARELLA
Scientific Associate Director Pathology, Pathobiology, Preclinical Sciences and Translational Safety (PSTS), J&J Innovative Medicine

TAMARA JAMASPISHVILI
MD, PhD, Assistant Professor and Director of Pathology Research Core & Digital Pathology, SUNY Upstate Medical University, NY

PETER GERSHKOVICH
Director, Section of Pathology Informatics and Cancer Data Science, Associate Professor, Yale University School of Medicine

ALINA AINBINDER
Principal Research Scientist, Takeda Pharmaceuticals

SENIOR REPRESENTATIVE
Aira Matrix

WILLIAM JECK
Assistant Professor, Surgical Pathology, Program Director, GI Surgical Pathology Fellowship, Duke University Hospital

RICK TORRES
CEO, Applikate Technologies Inc

SENIOR REPRESENTATIVE
Epredia

FANGYAO HU
Senior Principal Scientist AI, Genentech

ERICK LIN
Center for Devices and Radiological Health, FDA

8:00-8:50 Registration & Refreshments

8:50-9:00 Global Engage Welcome Address

9:00-9:35


KEYNOTE ADDRESS:

ULYSSES G. J. BALIS

Associate Chief Medical Information Officer, A. James French Professor of Pathology Informatics, University of Michigan

MUSTAFA YOUSIF

Assistant Professor and Director of Digital Pathology, University of Michigan

Preparing for and deploying all-digital workflow at significant scale: the University of Michigan Experience

Deploying digital pathology for primary diagnosis already carries with it a fair number of cultural, logistical, and financial challenges. When undertaking such an effort in a larger pathology practice, where the scale of both case volume and operational complexity is elevated, the level of project difficulty can substantially increase. In this presentation, Drs. Balis and Yousif will review the incremental planning and preparative measures that are necessary in complex institutions to assure a smooth and uneventful transition to all-digital workflow for primary diagnosis. Emphasis will be placed on change management, site preparation, cockpit design and capacity planning. Key aspects of image management system selection and deployment will also be covered, with an emphasis on productivity tools and readiness for deployment of AI-based tools.

9:35-10:10

KEYNOTE ADDRESS:

JASON HIPP

Chief Digital Innovation Officer, Mayo Collaborative Services, Mayo Clinic

Transforming Pathology through Digital Innovation: The Mayo Clinic Experience

10:10-10:40

SENIOR REPRESENTATIVE

Corista

10:40-11:30 Morning Refreshments / Poster Presentations / One to One Meetings

IMAGING AI & DIGITAL IMAGE ANALYSIS

11:30-11:55

RICHARD LEVENSON

Professor and Vice Chair for Strategic Technology, Department of Pathology and Laboratory Medicine, UC Davis

Slide-free, label-free and pain-free (where pain = cost, complexity)

Slide-free imaging can provide near-real-time histology results for biopsy monitoring and intraoperative surgical guidance. UC Davis is developing FIBI (fluorescence imitating brightfield imaging) and collaborating with Georgia Tech on qOBM (quantitative oblique back-illumination microscopy). These non-destructive methods use cost-effective optics and sensors to capture high-resolution images from unsectioned tissue. FIBI employs rapid staining for enhanced contrast, while stain-free qOBM produces immediate grayscale output, convertible to virtual H&E. Both modalities hold promise for AI integration. qOBM is also suitable for depth-resolved in-vivo imaging. FIBI is evolving for large-format, high-speed imaging (up to 10 x 10 cm2) for margin status determinations in surgery, and is being evaluated for deployment in Ghana, highlighting the versatility of slide-free approaches in diverse settings.

11:55-12:20

GIOVANNI LUJAN

Director of Digital and Computational Pathology, The Ohio State University

Using AI Tools in Routine Pathology Sign Out. Our Experience

- Selecting, testing, and validating AI tools.
- Deployment of AI tools during routine sign out.
- Regulatory aspects and Reimbursement.

DIGITAL PATHOLOGY IMPLEMENTATION, STRATEGY & APPLICATIONS

11:30-12:20

PANEL DISCUSSION:

Optimise the Business case for Digital Pathology

- Business case challenges
- What tools do we need to maximize digital efficiency in the laboratory?
- Benefits are there from going digital and how can they be described in a business case?
- Challenges for different sized organizations
- Efficiency by deployment at scale
- AI – Does this improve the business case
- Formulating documentation for procurement

SUNIL SINGHAL (Chair)

Principal Consultant, Synergess LLC

HARSH THAKER

Vice Chair, Digital and Integrative Pathology; Director, Anatomic Pathology, University of Texas Medical Branch – Galveston

ORLY ARDON

Director Digital Pathology Operations and Assistant Member, Memorial Sloan Kettering Cancer Center

SHAHLA MASOOD

Professor and Chair, Department of Pathology and Laboratory Medicine, University of Florida College of Medicine – Jacksonville

PHARMA/ BIOTECH CASE STUDIES

11:30-11:55

MARK GUSTAVSON

Senior Director, Oncology Translational Medicine, AstraZeneca

Leveraging Computational Pathology in Drug Development

- Computational Pathology provides greater analytical precision and potentially greater clinical accuracy enabling identification of best patients populations for clinical response to oncology therapies
- Quantitative Continuous Scoring (QCS) was developed to both quantify target expression in individual tumors cells and to quantify spatial heterogeneity of expression
- We will discuss how we are leveraging Computational Pathology approaches in drug development and our vision for Computational Pathology in drug development

11:55-12:20

DANIEL G. RUDMANN

Senior Director, Digital Toxicologic Pathology, Safety Assessment, Charles River

Building a nonclinical pathology laboratory of the future for pharmaceutical research excellence

We describe a roadmap for a fully digital artificial intelligence (AI)-augmented nonclinical pathology laboratory across three continents. Underpinning the design are Good Laboratory Practice (GLP)- validated laboratory information management systems (LIMS), whole slide-scanners (WSS), image management systems

11:55-12:20 Continued

12:20-12:50 **SENIOR REPRESENTATIVE**
Proscia

11:30-12:20 Continued

12:20-12:50 **SENIOR REPRESENTATIVE**
Epredia

11:55-12:20 (IMS), and a digital microscope intended for use by the nonclinical pathologist. Digital diagnostics are supported by tools that include AI-based virtual staining and deep learning based decision support. Implemented during the COVID-19 pandemic, the initial digitized workflow largely mitigated disruption of pivotal nonclinical studies required to support pharmaceutical clinical testing. We believe that this digital transformation of our nonclinical pathology laboratories will promote efficiency and innovation in the future and enhance the quality and speed of drug development decision making.

12:20-12:50 **30-Minute Solution Provider Presentation**
For sponsorship opportunities contact Gavin Hambrook
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12:50-1:55 Lunch

1:55-2:20

COREY ARNOLD
Professor and Vice Chair of Research, Radiology; Professor, Pathology, Bioengineering, and Electrical & Computer Engineering, UCLA
Multi-modal Medical Image Analysis in Prostate Cancer
Pathology and radiology imaging provide complementary information for the diagnosis and prognosis of prostate cancer. This talk discusses techniques for analyzing modalities individually as well as integrating imaging signals with clinical data using modern machine learning methods. Applications include cancer detection, grading, segmentation, and recurrence prediction across multi-institutional datasets.

1:55-2:20

ZOLTAN LASZIK
Director of Digital Pathology, UCSF
Digital pathology: The next chapter, post-adoption
Lessons learned from adopting digital and challenges post-adoption will be discussed with special emphasis on computational pathology for patient care.

1:55-2:20

CHIH-HONG WANG
Randolph Soltys, Jennifer Dill-Okubo, and Prachi Sharma, Drug Safety & Pharmacometrics*, Regeneron Pharmaceuticals
Utilizing Halo-AI for the Analysis of Pancreatic Cancer Biomarkers
Pancreatic ductal adenocarcinoma (PDA) is the predominant type of pancreatic cancer, with a 5-year survival rate of merely 10% in the United States. Early diagnosis significantly enhances the prospects for curative treatment. Currently, the most widely used biomarker for pancreatic cancer is carbohydrate antigen 19-9 (CA19-9), the only biomarker approved by the United States Food and Drug Administration (FDA). However, its low specificity necessitates the urgent development of novel biomarkers. In this study, we employ HALO AI, a deep learning neural network algorithms that offer train-by-example classification and segmentation tools, to analyze biomarkers in Oncology. Our results indicate that two biomarkers are significantly highly expressed in pancreatic cancer than the FDA-approved CA19-9. Therefore, Halo-AI provides a potent tool for discovering biomarkers in pancreatic cancer.

2:20-2:45

JANA LIPKOVA
Assistant Professor, Department. of Pathology and Molecular Medicine, University of California, Irvine
AI-based multimodal data fusion for outcome prediction in oncology
In oncology, the patient state is characterized by a spectrum of diverse medical data, each providing unique insights. The vast amount of data, however, makes it difficult for experts to adequately assess patient prognosis under the multimodal context. We present a deep learning-based multimodal framework for integration of radiology, histopathology, and genomics data to improve patient outcome prediction. The framework does not require annotations, tumor segmentation, or hand-crafted features and can be easily applied to larger cohorts and diverse disease models. The feasibility of the model is tested on two external independent cohorts, including glioma and non-small cell lung cancer, indicating benefits of multimodal data integration for patient risk stratification, outcome prediction, and prognostic biomarker exploration.

2:20-2:45

SUZANNE M DINTZIS
Professor, Department of Laboratory Medicine and Pathology, University of Washington School of Medicine
Beyond technology: The impact of digital pathology and AI on culture, teamwork, and communication
Discussions on barriers to digital implementation in pathology focus on technology choices, data management, and adopting new tools and processes. However, the practice of laboratory medicine and pathology requires workers to be physically present in the workplace to conduct tests and provide coordinated care with clinical teams. A challenge in successful digital implementation is understanding the impact that digitization has on work culture, ensuring that pathologists and laboratory staff agree upon which work will be completed remotely, and defining the requirements and expectations around work performance.

2:20-2:45

HATEF MEHRABIAN
Research Scientist, Computational Pathology Group, Gilead
Leveraging Immuno-Fluorescence Data to Reduce Pathologist Annotation Requirements in Lung Tumor Segmentation using Deep Learning
PanCK alone, a commonly used tumor marker in histopathology, is unable to provide accurate tumor segmentation due to its non-specificity and technical challenges. Thus, pathologist annotations are necessary (which is expensive and time-consuming). Model pretraining with panCK-based tumor annotations has the potential to minimize the required amount of pathologist annotations. Training the model with panCK and 30% of pathologist annotation performed similarly to the model trained with no panCK and 100% of pathologist annotations.

2:45-3:10

DANIEL G. RUDMANN
Senior Director, Digital Toxicologic Pathology, Safety Assessment, Charles River
Development of deep learning AI classifiers and integration into a commercially available decision support tool for toxicologic pathology
Specific In drug development, animal studies are crucial for assessing safety in support of clinical trials. We selected 15 organs and 47 lesions that are commonly encountered in rat studies (up to 3 month in duration). We developed pixel segmentation classifiers for all prioritised organs and most lesions, object-based and rare event detection classifiers for findings like mitoses or apoptosis, and density-based approaches for lesions such as hepatocellular hypertrophy. In the study browser, pathologists are provided with a classifier-generated coloured mask overlay on the hematoxyin and eosin stained slide that highlights the probability of the presence of a specific lesion class. The pathologist can adjust the probability and select specific lesion classes as necessary to support their study-specific requirements. The development of these type of classifiers should enhance workflow efficiency and quality for the toxicologic pathologist in the assessment of nonclinical animal studies.

2:45-3:10

ORLY ARDON
Director Digital Pathology Operations and Assistant Member, Memorial Sloan Kettering Cancer Center
Phased adoption of digital pathology: lessons from early adopters
Digital pathology holds many promises to patient care yet requires additional resources for infrastructure building and ongoing operations. The costs of these added resources are a barrier for adoption in many organizations. The talk will explore the benefits of a phased implementation of digital pathology and potential considerations and impact on pathology departments.

2:45-3:10

SRIPAD RAM
Digital Pathology and Image Analysis Group Lead, Drug Safety R&D, Pfizer Inc.
Biomarker scoring in the digital era – developing and deploying digital scoring algorithms from bench to clinic
- Provide an overview of design and validation of digital image analysis algorithms for clinical trials and prospective CDx assays.
- Present a novel strategy for optimizing scoring algorithms by leveraging orthogonal endpoints of biomarker abundance

3:10-3:25

RICK TORRES
CEO, Applikate Technologies Inc
Beyond glass slides: next-generation histopathology with Applikate
Quality of care may be improved with digital images, but adoption faces workflow, cost, and performance challenges. A novel approach using advanced tissue processing and a unique laser microscopy system potentially addresses these issues. Applikate's direct-to-digital technology vastly increases the quantity of and access to high-quality, slide-free histology data deep into intact excised tissue, and better informs review by remote pathologists and AI. Easily integrating clearing histology with multiphoton microscopy into a workflow provides more 3D, H&E data earlier, in about 3 hours, and could reduce toxic waste, cost, labor, and turnaround times without compromising microscopic review.

3:10-3:25

SENIOR REPRESENTATIVE
Histowiz

3:10-3:40

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
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3:25-3:40

SAM SEYMOUR
Director of Product, Paige
Digitizing External Consultations to Optimize Pathology Operations
Discover how Paige is transforming collaborative diagnosis and driving the future of pathology with the largest digital pathology consultation network. Through our partnership with Nuance PowerShare, we simplify collaboration by enabling secure, real-time sharing of case information, images, and reports. Eliminate delays and risks associated with manual slide shipping, streamlining your diagnostic process.

3:25-3:40

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

3:40-4:45 Afternoon Refreshments / Poster Presentations / One to One Meetings

4:45-5:15

W. DEAN WALLACE
Professor of Pathology, Keck School of Medicine of USC
Looking Under the Hood of your Digital Pathology System

All pathologists understand the role of the Whole Slide Scanner (WSI) as the saliant component in digital pathology, but what other equipment do you need for a complete end-to-end system? This talk will outline the constituent parts – from Histology lab to finalized pathology report – in a fully digitized pathology workflow and all of the involved parties that you need to be aware of as you begin your digital pathology transformation. If you are just starting on your digital journey or if you want to better understand who are the stakeholders involved in setting up and maintaining a functional digital pathology service, this talk is for you.

4:45-5:15

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

4:45-5:15

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

5:15-5:40

ERICK LIN
Center for Devices and Radiological Health, FDA
Topic: Regulatory Challenges and opportunities for Digital Pathology & AI

5:15-5:40

HARSH THAKER
Vice Chair, Digital and Integrative Pathology; Director, Anatomic Pathology, University of Texas Medical Branch – Galveston
Perils and Pitfalls on the Digital Pathology Journey- And How to Avoid Them

In this talk we will focus on the challenges – technical, financial, and psychological - that can come in the way of a successful digital pathology adoption. We will discuss how to anticipate these challenges and steps that can be taken to avoid them by careful planning and thoughtful change management, customized to the specific implementation.

5:15-5:40

ERIO BARALE-THOMAS
Scientific Associate Director, Pathobiology, DPDS – Preclinical Sciences & Translational Safety, J&J Innovative Medicine
Histology LIS as a digital recording tool to fill the gap between sampling and analysis of the pathological specimens

The digital pathology workflow includes more than scanning glass slides and viewing and assessing them digitally. Pre- and post-analyticals are also important. In this talk, we will present our laboratory information system (LIS) for histology, developed internally (in the absence of a J&J team-approved commercial solution) and progressively deployed over our research sites. The LIS removes the need to use paper histosheets for documenting histoprocessing and managing histology devices. It groups in a unified platform histological steps (recut/trimming, processing/infiltration, embedding, microtomy, staining/coverslipping). It presents each module with a common interface and uses extensively controlled terminologies. It allows the technicians to add comments and to ask recuts and special stains. It ensures traceability by barcoding tissue blocks and glass slides. It produces FAIR histoprocessing data and automates their archiving. In a future version, a dashboard module will be added to better follow the equipment (preventive maintenance) and distribute the work among the team and devices.

5:40-6:30

PANEL DISCUSSION:
Recent Advances and Innovation in Digital Pathology and AI

- Current state of deployment in US
  - What is needed, measuring benefits
- AI – Ground truth to development to deployment
  - Impact on pathologists
- What can be done by the community to improve healthcare with DP & AI

GIOVANNI LUJAN
Director of Digital and Computational Pathology, The Ohio State University

RICHARD LEVENSON
Professor and Vice Chair for Strategic Technology, Department of Pathology and Laboratory Medicine, UC Davis

5:40-6:05

EDER LAGEMANN
Global Director of Digital Pathology, KLAS Research
Best Practices and Successes from Early Adopters in the US

5:40-6:30

ROUNDTABLE SESSION

Roundtables are informal, small-group interactive discussions on key topics in the field. Discussion leaders will introduce sub-topics/ questions for discussion and roundtable attendees are encouraged to participate actively in the session.

ROUNDTABLE 1:
Exploring New Frontiers: Strategies for Evaluating and Validating H&E Models for Novel Biomarker Discovery
NATASHA DARRAS
MD, Director, Digital Pathology & Innovation, Oncology & Cell Therapy Clinical Biomarker Sciences, Takeda Pharmaceuticals

- Discuss the current state and training of H&E models for novel biomarker discovery
- Discuss strategies for validating these models including pathologist evaluation, IHC and orthogonal datasets
- Discuss the potential for standardization of model validation approaches to optimize performance

5:40-6:30

Continued

6:05-6:30

EVITA SADIMIN
Chief, Division of Pathology Informatics and Data Scienc, Department of Pathology, City of Hope National Medical Center

Practical considerations in surgical pathology practice utilizing digital pathology

- Workflow considerations in establishing digital pathology for surgical pathology practice
- Tools and methods to improve efficiency and reduce errors in providing diagnosis
- Optimizing EHR-IMS interface to support digital pathology for clinical and research purposes

5:40-6:30

ROUNDTABLE 2:
Assessing and addressing tumor heterogeneity
LAURA DILLON
Vice President, Translational Medicine & Bioinformatics, Incendia Therapeutics

ROUNDTABLE 3:
Build, buy or do a bit of both: making decisions in digital pathology informatics landscape
SRIPAD RAM
Digital Pathology and Image Analysis Group Lead, Drug Safety R&D, Pfizer Inc.

6:30 Networking Drinks Reception

8:00-8:50 Registration & Refreshments

8:50-9:00 Global Engage Welcome Address

9:00-10:05

KEYNOTE ADDRESS:
HOOMAN RASHIDI
Professor & Associate Dean of AI, University of Pittsburgh School of Medicine, Executive Director of Computational Pathology & Ai Center of Excellence (CPACE), UPMC
Reshaping the Future of Medical Care, Education and Research: The Pivotal Roles of Synthetic Data, Generative AI, and Auto-MLs

Several known obstacles in accessing medical data are directly tied to strict but understandably required regulatory restrictions within this space. HIPAA in the US and GDPR in the EU are in place to protect such patient privacy concerns and help prevent the abuse of sensitive data. Although these regulations are necessary, they also make it difficult for innovators and researchers to acquire and use such data in a timely manner to progress their quality studies and healthcare research. Major advancements in machine learning have greatly moved forward the advent of synthetic data creation which will hopefully help overcome some of the aforementioned obstacles. The use of such data will not only dramatically expedite data access to the individual investigators but may markedly lower the entry barriers in healthcare research and innovation.

10:05-10:35

SENIOR REPRESENTATIVE
Aira Matrix
Topic TBC

9:00-9:35

MATHIEU MARELLA
Scientific Associate Director Pathology, Pathobiology, Preclinical Sciences and Translational Safety (PSTS), J&J Innovative Medicine
Molecular & Digital Pathology Applications In Animal Model Characterization

- There is a lot of challenges to face when developing an animal model: need to reproduce key features of the disease, need to be able to answer key questions on hands and have translational relevance to human. Working with animal model is low throughput and very resource intensive.
- Leveraging A.I. driven pathology tools enable in-depth feature rich characterization for model selection and refinement.
- Here we are discussing the implementation of digital pathology & molecular pathology tools to contextualize biology at the microanatomical level and produce unbiased and consistent rich datasets with simultaneous endpoints not feasible by manual analysis.

9:35-10:05

LAURA DILLON
Vice President, Translational Medicine & Bioinformatics, Incendia Therapeutics
Leveraging novel digital pathology approaches to understand T cell exclusion in the tumor microenvironment

- Utilizing digital pathology and AI to quantify immune exclusion across tumor types
- Evaluating tumor heterogeneity in 2D and 3D
- Assessing stromal features as potential biomarkers of response

10:35-11:25 Morning Refreshments / Poster Presentations / One to One Meetings

COMPUTATIONAL PATHOLOGY & AI

11:25-11:50

SAVITRI KRISHNAMURTHY
Deputy Division Head and Director for Clinical Trials Research and Development, MD Anderson Cancer Centre
AI-based solution for evaluation of HER2 protein expression in breast cancer

The recent availability of targeted therapy directed towards patients with not only HER2 positive but also with low levels of protein expression necessitates the need for objective scoring of HER2 immunostain. A fully automated AI solution was developed to aid pathologists for improving interobserver concordance in HER2 scoring particularly for optimal identification of HER2-Low breast cancer. The AI tool accurately identified invasive cancer in the tissue sections and demonstrated accuracy of 92% for HER2 scoring in comparison to the high confidence ground truth established by a team of breast experts.

DIGITAL PATHOLOGY STRATEGY & APPLICATIONS

11:25-11:50

BRITTANY DUGGER
Associate Professor, Department of Pathology and Laboratory Medicine, UC Davis

DAVID A. GUTMAN
Assistant Professor, Biomedical Informatics, Emory University
Cross disciplinary dialogs for building out machine learning: advice from the digital pathology road

We are in an age of machine learning and many would like to implement processes into their workflow. In this discussion, we aim to provide advice from both the pathology (Dr. Dugger) and machine learning (Dr. Gutman) perspectives into enhancing cross disciplinary dialogs between these two amazing fields.

PHARMA/ BIOTECH CASE STUDIES

11:25-11:50

FABIAN HEINEMANN
Chapter lead IT Data Science and Head Central Data Science EMEA, Boehringer Ingelheim
Custom Artificial Intelligence(AI) applications for quantitative histopathology

This presentation will show the power of custom deep learning methods in digital pathology to speed-up pharmaceutical research. The first part will demonstrate various applications that automate routine quantification tasks, which were previously limited to pathologists. Examples will include 1) analysis of lung fibrosis using the Ashcroft score, 2) quantifying histopathological parameters of nonalcoholic steatohepatitis (NASH), and 3) the automatic counting of regenerating vessels to support drug discovery in diabetic retinopathy. Part two of the presentation will focus on applications with unsupervised and generative methods. 1) An algorithm for anomaly detection in histopathological images will be presented which can support early tox assessment. 2) approaches using generative adversarial networks to convert histological stains that generate virtual stains that can be indistinguishable for pathologists.

11:50-12:15

J. MARK TUTHILL
Division Head, Pathology Informatics, Henry Ford Health System
The Impact of Quality Assurance in Histology on Artificial Intelligence and Machine Learning Pipelines: The Critical need for Inline End to End Quality Assurance Programs

- Describe the current state of histology quality assurance in the histology laboratory
- Understand the impact of the quality of histology and histochemistry on digital pathology, whole slide imaging and artificial intelligence algorithms and the unique requirements when applied to IHC
- Discuss approaches and best practices to applying image analysis and AI to develop next generation quality assurance programs

11:50-12:15

ARVIND RAO
Associate Professor, Computational Medicine and Bioinformatics, University of Michigan
Machine Learning Approaches To The Interpretation Of Spatial Imaging & Transcriptomics for Personalized Medicine

- Analysis of H&E image data with graph neural networks for the assessment of disease phenotypes
- Use of AI/ML and spatial analytics of the tumor microenvironment to derive spatial biomarkers of immunotherapy, based on spatial multiplexed imaging (Vectra, CODEX)
- Integration of single cell and spatial transcriptomics

11:50-12:15

CHAO-HUI HUANG
Senior Principal Scientist, Quantitative Image Analysis, Pfizer
Unlocking insights from spatial transcriptomcis with a large language model

In this work, we proposed a new approach to integrate spatial transcriptomics with digital data analysis and utilize the power of large language models (LLM) for decoding spatial transcriptomic data in order to provide comprehensive and detailed analyses for a scientific investigation, In this work, we used cell-cell interaction as the example. The results suggested that by providing a proper interface between the outcomes of advanced machine learning, an LLM can provide a comprehensive interpretation of the given dataset. As a result, the development of LLM represents a significant step forward in spatial transcriptomic data analysis and has the potential to enhance our understanding of complex biological processes greatly.

12:15-12:45

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

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12:45-1:00

POSTER FLASH PRESENTATIONS:
Presenters will be provided with the opportunity to give a flash 4-minute overview talk
Deadline 19th April

12:45-1:00

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1:00-2:10 Lunch / Poster Presentations / One to One Meetings

2:10-2:40

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2:40-3:05

JOSHUA J. LEVY
Director of Digital Pathology Research, Assistant Professor of Pathology and Computational Biomedicine, Cedars Sinai Medical Center
From Clinical Decision Support to Spatial Biomarker Development, Explore the Role of Translational AI Research for Digital Pathology @ Cedars Sinai

Attendees will learn about emerging digital pathology research infrastructure at Cedars Sinai with a focus on translational applications of AI technologies across various diagnostic subspecialties. Use cases in digital technologies for cytopathology and spatial transcriptomics data for clinical decision support and biomarker development will be highlighted. In addition, this presentation will also feature discussion of ongoing collaborative multi-center validation efforts, development of national resources to facilitate digital pathology research, and challenges and opportunities for future work in this domain.

2:40-3:05

SHAHLA MASOOD
Professor and Chair, Department of Pathology and Laboratory Medicine, University of Florida College of Medicine – Jacksonville
How AI can be used as a complementary tool in diagnostic pathology

2:40-3:05

ALBERT JUAN RAMÓN
Principal Scientist, Johnson & Johnson
From Pixels to Insights: Advancing Drug Development with Digital Pathology and AI at Johnson & Johnson

This presentation delves into the revolutionary impact of Digital Pathology and AI on drug development, spotlighting Johnson & Johnson's initiatives. Through live demonstrations, we showcase AI models that aid in disease diagnosis, biomarker detection, and patient stratification in clinical histopathology. The session also features AI algorithms that characterize the tumor microenvironment to predict patient responses to therapies. Additionally, we demonstrate how AI facilitates image analysis and reduces variability in preclinical histopathology. This exploration underscores the pivotal role of Digital Pathology and AI in revolutionizing drug development, offering a glimpse into the future of precision medicine.

3:05-3:30

PRITI LAL

Professor, Pathology and Laboratory Medicine, Director, GU Pathology, University of Pennsylvania

The Digital future of Prostate Cancer: Beyond the Optical Scope and Architectural confines

Architectural scoring system has defined prostate cancer for almost half a century. While the resolution of an optical microscope allows for observation of numerous characteristics of prostate cancer, Gleason grading along with a few additional clinical data points have been the basis of diagnosis, prognosis and management of prostate cancer. Digitization of glass slides along with exponential increase in computational abilities has enabled integration of data points beyond the architecture of prostate cancer to include its surrounding microenvironment forging the path towards new discoveries and development of precise management strategies.

3:30-3:55

TAMARA JAMASPISHVILI

MD, PhD, Assistant Professor and Director of Pathology Research Core & Digital Pathology, SUNY Upstate Medical University, NY

Reshaping Current Practices in Pathology for Improved Precision Oncology

Pathology, a fundamental field of medicine and research, is undergoing a transformative change driven by Artificial Intelligence (AI) and Computational Pathology. This presentation will focus on the revolutionary role these technologies may bring to the field, including the challenges and opportunities we may face. Many clinical and research pathology labs show that AI-powered algorithms augment the accuracy and efficiency of diagnoses, minimize bias and human errors, and improve patient risk stratification and prognostication, ultimately leading to improved patient care. This presentation will discuss the gaps we face in current pathology practices and viable options for addressing these challenges through digital pathology implementation, leveraging computational pathology and AI-powered quantitative approaches in clinical practice. The presentation will provide examples from her current lab of successful academia-industry partnerships with AI vendor companies. Describe the importance of these relationships for the implementation and deployment of AI-powered tools in clinical practice.

3:05-3:30

PETER GERSHKOVICH

Director, Section of Pathology Informatics and Cancer Data Science, Associate Professor, Yale University School of Medicine

Navigating WSI De-Identification: A Practical Approach

- WSI De-Identification Challenges
- Automated De-Identification Pipeline
- Collaboration and Enhancements
- Ensuring Compliance and Continuous Evaluation
- Implementation and Best Practices

3:30-3:55

WILLIAM JECK

Assistant Professor, Surgical Pathology, Program Director, GI Surgical Pathology Fellowship, Duke University Hospital

Algorithms as Laboratory Developed Tests: From Concept to Implementation in an Academic Setting

Advanced machine learning techniques continue to demonstrate promise in improving diagnosis and reducing pain points in anatomic pathology. Academic and large care systems are in a unique position to both design and internally implement machine learning techniques for their practicing pathologists. This talk will discuss a 'full stack' experience developing a glomerular detection algorithm for frozen section diagnosis, with an emphasis on the practicalities of algorithm validation as a laboratory developed test.

3:05-3:30

ALINA AINBINDER

Principal Research Scientist, Takeda Pharmaceuticals

Harmonizing Discovery by Bridging Clinical & Computational Experts in Spatial Biology and Digital Pathology

- Constructing a cohesive infrastructure for digital pathology: key considerations for transitioning to a cloud environment.
- Developing strategies to gaining organizational support for digital pathology initiatives
- Fostering collaboration between clinical, computational, and discovery researchers

3:30-3:55

FANGYAO HU

Senior Principal Scientist AI, Genentech

Pharma / Biotech case study

4:20 End of Conference

FREE POSTER PRESENTATIONS AND FLASH TALKS
DEADLINE 19TH APRIL 2024

Whether looking for funding, employment opportunities or simply wanting to share your work with a like-minded and focused group, these are an excellent way to join the heart of this congress. In order to present a poster at the forum, you need to be registered as a delegate. Please note that there is limited space available and poster space is assigned on a first-come-first-served basis (subject to checks and successful registration).

- Poster presentations are actively encouraged at this event and as such registered academic and industry delegates are invited to present 1 poster each for free.

- Posters are displayed for the full two days of the event.

- We have reserved space on the program for non-vendor authors to present a flash presentation of their poster in order to showcase their work.

- We also issue a poster eBook to all attendees containing your full abstract, and you can share your poster as a PDF after the meeting if you desire (optional).

MAKING A POSTER PRESENTATION

We will require the form Downloadable from the Poster section of our website to be submitted by 19th April 2024
https://global-engage.com/product/digital-pathology-usa-2024/#poster_presentation

SUSTAINABILITY

Venues with Sustainability Goals

We are committed to selecting venues with more sustainable practices. These will cover energy supply, food & waste, water use, recycling and plastics. The Marriot La Jolla is Tripadvisor GreenLeaders Certified. The hotel website shows a carbon footprint of 11.6 kgs per room night. The hotel footprint calculator Greenview reveals that the US average is 17.6 kgs per night (higher for 4 & 5* hotels.)

Catering

You will have some great food choices while you are with us. We have worked with the caterer to increase the proportion of plant-based items. We have also built a plan with the venue to avoid waste through how they serve meals and how any leftovers are processed. Our aim is that you have some great meals, whilst with us, but with less environmental impact by the time you leave.

Travel

An international meeting does involve travel but where it is practical, please consider more sustainable alternatives to flying. The app will also have a discussion space to arrange ride shares.