

MONDAY, June 7th, 2021

Overview of the Indiana O'Brien Center

10 am -10:15 am

WELCOME AND WORKSHOP OVERVIEW

Pierre Dagher – IUSM (MODERATOR)

10:15 am -10:55 am

Intravital multiphoton microscopy

Bruce Molitoris - IUSM

10:55 am – 11:35 am

Kidney tissue cytometry

Tarek Ashkar - IUSM

11:35 am – 11:45 am

BREAK

11:45 am – 12:25 pm

Spatial transcriptomics of the kidney

Michael Eadon - IUSM

12:25 pm – 1:00pm

Digital image analysis

Ken Dunn – Indiana Center for Biological Microscopy, IUSM

1:00pm – 2:00pm Concurrent demonstration sessions

1:00 pm – 2:00 pm

Intravital microscopy of rat kidney

***SEPARATE REGISTRATION REQUIRED** – link below

Ruben Sandoval (Molitoris Group)- IUSM

1:00 pm – 2:00 pm

Dinavid online image analysis *Use your general workshop link

Ken Dunn – Indiana Center for Biological Microscopy, IUSM

2:00pm – 3:00pm Concurrent demonstration sessions

2:00 pm - 3:00 pm

Intravital microscopy of mouse kidney through an abdominal imaging window

***SEPARATE REGISTRATION REQUIRED** - link below

Michelle Martinez (Dunn Group) - IUSM

2:00 pm – 3:00 pm

Spatial transcriptomics analysis *Use your general workshop link

Ricardo Melo Ferreira and Ying-Hua Cheng (Eadon Group)- IUSM

*REGISTER AT: https://iu.zoom.us/webinar/register/WN_jWCdOR0hSseiDFkVeYqDAQ

TUESDAY, June 8th, 2021

Large Scale Cytometry

10:00 am -10:05 am

WELCOME AND INTRODUCTION

Tarek Ashkar – IUSM (MODERATOR)

10:05 am -10:45 am

Highly multiplexed imaging of tissues with subcellular resolution by imaging mass cytometry

Bernd Bodenmiller -University of Zurich, Switzerland

10:45 am – 11:25am

Imaging mass cytometry of the kidney

Lloyd Cantley – Yale University

11:25 am – 11:35 am

BREAK

11:35 am – 12:15 pm

Multi-platform imaging of the kidney

Jeffrey Spraggins – Vanderbilt University

12:15 pm – 12:55 pm

Large-scale fluorescence tissue cytometry

Michael Gerner – University of Washington

1:00pm – 2:00pm ROUND TABLE DISCUSSION

2:00pm – 3:30pm Afternoon demonstration sessions

2:00 pm – 2:30 pm

Histocat, Cytomapper software

Anton Rau and Nils Eling (Bodenmiller Group) – University of Zurich

2:30 pm – 3:00 pm

Cytomap software

Caleb Stoltzfus (Gerner Group) – University of Washington

3:00 pm - 3:30 pm

VTEA software

Seth Winfree – University of Nebraska

WEDNESDAY, June 9th, 2021 Paradigms in Image and Data Analysis in Biological Microscopy

10:00 am -10:05 am

WELCOME AND INTRODUCTION

Seth Winfree – University of Nebraska (MODERATOR)

10:05 am -10:45 am

Overview and tissue image analysis

Carolina Wahlby – Uppsala University, Sweden

10:45 am – 11:25am

Life beyond the pixels: single-cell analysis using deep learning and image analysis methods

Peter Horvath – Hungarian Academy of Science

11:25 am – 11:35 am

BREAK

11:35 am – 12:15 pm

Cloud-based and deep learning image analysis

David Van Valen – California Institute of Technology

12:15 pm – 12:55 pm

Machine learning in digital pathology

Pinaki Sarder – University at Buffalo

1:00pm – 2:00pm ROUND TABLE DISCUSSION

2:00pm – 3:00pm Afternoon demonstration sessions

2:00 pm – 2:30 pm

NucleiAlzer, 3D Cell Annotator software

Reka Hollandi (Horvath Group) – Hungarian Academy of Science

2:30 pm – 3:00 pm

DeepCell Kiosk software

David Van Valen - Caltech

THURSDAY, June 10th, 2021 **New Approaches to Large-scale and High-content Microscopy**

9:30 am -9:35 am

WELCOME AND INTRODUCTION

Ken Dunn – ICBM, IUSM (MODERATOR)

9:35 am -10:15 am

Spatially resolved transcriptomics - combining imaging and an unbiased view of gene expression in situ

Joakim Lundeberg – KTH Royal Institute of Technology in Stockholm, Sweden

10:15 am – 10:55 am

Spatial transcriptomics of the kidney

Jamie Marshall – Broad Institute

10:55 am – 11:05 am

BREAK

11:05 am – 11:45 am

Multiplex imaging of protein, RNA, DNA

Yodai Takei - Caltech

11:45 am – 12:25 pm

Lightsheet microscopy in pathology

Jonathan Liu – University of Washington

12:25 pm – 1:05 pm

Lightsheet microscopy of the kidney

Denise Marciano – UT Southwestern Medical Center

1:05pm – 2:00pm ROUND TABLE DISCUSSION

2:00pm – 4:00 pm Afternoon demonstration sessions

2:00 pm – 3:00 pm

Leica DLS microscope

Genevieve Phillips, Leica Microsystems GmbH

3:00 pm – 3:30 pm

Imaris 3D image analysis software

Malgorzata Kamocka – Indiana Center for Biological Microscopy, IUSM

3:30 pm – 4:00 pm

Halo multiplex image analysis software

Connor Gulbranson – Indiana Center for Biological Microscopy, IUSM