



Workshop on Phenotyping Mouse Models of Human Lung Disease October 4-7, 2021

Sunday, October 3rd, 2021: Registration

- 4:00pm Registration at Highseas (Highseas 1st floor)
- 5:00pm Welcome reception
- 6:00pm Dinner
- 7:00pm Introductions (Highseas 1st floor)

Monday, October 4th, 2021: *The Mouse and How We Use It*

- 7:00am **Breakfast** (Highseas 1st Floor)
- 8:00am **Welcome** (Highseas 3rd Floor Classroom)
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
- 8:15am **Mouse Models of Lung Disease**
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
- 9:15am Break
- 9:30am **Normal Mouse Cytology and the Role of Immune Cells in Mouse Models of Lung Disease**
Michael Borchers, Ph.D., Univ of Cincinnati
- 10:30am **Introduction to Mouse Ventilation Systems**
Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
- 11:30am Lunch (Highseas 1st Floor)
- 12:30pm **Mouse Husbandry, Breeding and Genetic Quality Control** (Highseas 3rd Floor)
Peter Kelmenson, M.S., The Jackson Laboratory
- 1:30pm Travel to GRB Training Lab (van transportation provided)

- 1:45pm **Hands-on Mouse Techniques: Handling, Restraint, IP Injection, and Mandibular Blood Collection** (GRB 3245)
Angela Begin, M.B.A., The Jackson Laboratory
Travis Burpee, The Jackson Laboratory
- 3:15pm **Sampling Techniques: Cardiac Puncture, & Bone Marrow Collection**
Michael Borchers, Ph.D., University of Cincinnati
Jeffrey Loube, B.S., John Hopkins Bloomberg School of Public Health
Danielle Stiene, B.S., University of Cincinnati
Jennifer Corrigan, M.S., The Jackson Laboratory
- 4:30pm **Blood Smears**
Michael Borchers, Ph.D., University of Cincinnati
Danielle Stiene, B.S., University of Cincinnati
- 5:00pm Travel to Highseas (van transportation provided)
- 6:00pm Dinner (Highseas 1st floor)
- 7:00pm **Participant Presentations** (Highseas 3rd floor)
Participants are encouraged to bring a 5-10 min slide presentation of their work

Tuesday, October 5th, 2021: Assessment of Mouse Lung Function

- 7:00am **Breakfast** (Highseas 1st Floor)
- 8:00am **Foundations of Lung Function and Assessment with Forced Oscillation** (Highseas 3rd floor)
Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
- 9:00am **Lung Volumes, Pressure-Volume Curves, and Lung Diffusing Capacity**
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
- 9:45am **Break**
- 10:00am **Mouse Lung Intubation** (Highseas 3rd floor)
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
- 10:15 am **Introduction to the Flexivent**
Annette Robichaud, Ph.D., Isabelle Aiken, M.S., and Nicholas Heath, M.S., SCIREQ Scientific Respiratory Equipment Inc.
- 11:30am Lunch (Highseas 1st Floor)
- 12:30pm Travel to GRB Training Lab (van transportation provided)

- 12:45pm **Tracheostomy** (GRB 3245)
Jeffrey Loube, B.S., John Hopkins Bloomberg School of Public Health
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
- 1:45pm **Concurrent Rotating Labs**
- **Flexivent: Tracheostomy and Pressure Volume Curves** (½ of class, 2 hrs)
Annette Robichaud, Ph.D., Isabelle Aiken, M.S., and Nicholas Heath, M.S., SCIREQ Scientific Respiratory Equipment Inc.
Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
 - **Sampling Techniques Continued: Lavage & Cover Slipping** (1/2 of class, 2 hrs)
Michael Borchers, Ph.D., Univ of Cincinnati
- 3:30pm **Rotate Concurrent Labs**
- 5:15pm Travel to Highseas (van transportation provided)
- 6:00pm Dinner (Highseas 1st floor)
- 7:00pm **Participant Presentations** (continued, if needed, Highseas 3rd floor)

Wednesday, October 6th, 2021: *Generating and Analyzing Pulmonary Mouse Models*

- 7:00am **Breakfast** (Highseas 1st Floor)
- 8:00am **Introduction to the Light Microscope and Optimizing Image Acquisition**
(Highseas 3rd floor)
Douglas Taatjes, Ph.D., The University of Vermont
- 9:00am **Pathology of Mouse Models of Lung Disease**
Cory Brayton, D.V.M., ACVP, John Hopkins University School of Medicine
- 10:00am **Break**
- 10:15am **Harvest & Fixation Techniques**
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
- 10:45am **Introduction to Morphometry/Stereology and Sampling as Applied to the Lung**
Christian Mühlfeld, Ph.D., Hannover Medical School
- 11:45am Lunch (Highseas 1st Floor)
- 12:45pm Travel to GRB Training Lab (van transportation provided)
- 1:00pm **Concurrent Rotating Labs** (GRB 3245)
- **FlexiVent Dose Response Curves** (½ of class, 1.5 hrs)
Annette Robichaud, Ph.D., Isabelle Aiken, M.S., and Nicholas Heath, M.S., SCIREQ Scientific Respiratory Equipment Inc.

- Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
- **Intubation** (¼ of class, 45 min)
Jeffrey Loube, B.S., John Hopkins Bloomberg School of Public Health
- **Lung Harvest, Fixation, and Volume Measurement** (¼ of class, 45 min)
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health

2:30pm **Rotate Concurrent Labs**

4:00pm **Slide Review:** Bring your questions and FIXED slides for analysis

Note: Do NOT bring fresh tissue to The Jackson Laboratory!

Cory Brayton, D.V.M., ACVP, John Hopkins University School of Medicine
Douglas Taatjes, Ph.D., The University of Vermont

4:45pm Travel to Highseas (van transportation provided)

6:00pm Lobster Dinner (Highseas 1st floor)

Thursday, October 7th, 2021: Quantitative Lung Imaging

7:00am **Breakfast** (Highseas 1st Floor)

8:00am **Considerations for Image Presentation and Imaging Ethics**
Douglas Taatjes, Ph.D., The University of Vermont

9:00am **Practical Exercise in Lung Stereology I: Volume Estimation**
Christian Mühlfeld, Ph.D., Hannover Medical School

10:00am Break

10:15am **Practical Exercise in Lung Stereology II: Surface Area Estimation**
Christian Mühlfeld, Ph.D., Hannover Medical School

11:15 am **Humanized Mice and Patient Derived Xenografts (PDX)**
Brian Soper, Ph.D., The Jackson Laboratory

12:30pm Lunch (Highseas 1st Floor)

1:30pm Free time

6:00pm Dinner (Highseas 1st Floor)

Friday, October 8th, 2021

7:00am Breakfast (Grab & Go, Highseas 1st Floor)

9:00am Departures