Workshop on Phenotyping Mouse Models of Human Lung Disease
October 4-8, 2021

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

8:00am  Welcome
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

12:30pm  Mouse Husbandry, Breeding and Genetic Quality Control
Krista Geister, Ph.D., The Jackson Laboratory

1:30pm  Travel to GRB Training Lab

1:45pm  Hands-on Mouse Techniques: Handling, Restraint & IP Injection
Kristin Cough, B.S., The Jackson Laboratory

3:15pm  Sampling Techniques: Cardiac Puncture, Mandibular Blood Collection & Bone Marrow Collection
Michael Borchers, Ph.D., University of Cincinnati
Jennifer Corrigan, M.S., The Jackson Laboratory
Kristin Cough, B.S., The Jackson Laboratory
Jeffrey Loube, B.S., John Hopkins Bloomberg School of Public Health

4:30pm  **Blood Smears**  
Michael Borchers, Ph.D., University of Cincinnati

5:00pm  Travel to Highseas

6:00pm  Dinner

7:00pm  **Participant Presentations** (Bring a 10 min PowerPoint presentation of your work.)

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

8:00am  **Foundations of Lung Function and Assessment with Forced Oscillation**  
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**  
Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health

10:15 am  **Introduction to the Flexivent**  
Annette Robichaud, Ph.D., Stephanie Rosenbaum, Msc., and Danielle Hopkins, Msc., SCIREQ Scientific Respiratory Equipment Inc.

11:30am  Lunch

12:30  Travel to GRB Training Lab

12:45pm  **Tracheostomy**  
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., Stephanie Rosenbaum, Msc., and Danielle Hopkins, Msc., 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
6:00pm    Dinner
7:00pm    Participant Presentations (Bring a 10 min PowerPoint presentation of your work.)

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

8:00am    Introduction to the Light Microscope and Optimizing Image Acquisition
          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

12:45pm   Travel to GRB Training Lab

1:00pm    Concurrent Rotating Labs
          - **FlexiVent Dose Response Curves** (½ of class, 1.5 hrs)
            Annette Robichaud, Ph.D., Stephanie Rosenbaum, Msc., and Danielle Hopkins, Msc., SCIREQ Scientific Respiratory Equipment Inc.
            Lennart K.A. Lundblad, Ph.D., Meakins-Christie Labs, McGill University
          - **Intubation & Lung Volume Measurement** (¼ of class, 45 min then switch to Lung Harvest & Fixation)
            Wayne Mitzner, Ph.D., John Hopkins Bloomberg School of Public Health
          - **Lung Harvest & Fixation** (¼ of class, 45 min then switch to Intubation & Measuring Lung Volume)
            Christian Mühlfeld, Ph.D., Hannover Medical School

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
Thursday, Monday, October 7th, 2021: *Quantitative Lung Imaging*

8:00am  **Practical Exercise in Lung Stereology I: Volume Estimation**  
Christian Mühlfeld, Ph.D., Hannover Medical School

9:15am  **Practical Exercise in Lung Stereology II: Surface Area Estimation**  
Christian Mühlfeld, Ph.D., Hannover Medical School

10:45am  Break

11:00am  **Considerations for Image Presentation and Imaging Ethics**  
Douglas Taatjes, Ph.D., The University of Vermont

12:00pm  **Humanized Mice and Patient Derived Xenografts (PDX)**  
Brian Soper, Ph.D., The Jackson Laboratory

1:00pm  Lunch (Highseas dining room)

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Friday, October 8th, 2021

Departures