

Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases Conference

AGENDA

MONDAY, JULY 27

- 8:30-4:30 PM Hands-on workshop, Rowell Building, UVM Campus
- 5:00-6:00 Welcoming Reception and Registration, Hotel Vermont

Session 1: Tracheal Bioengineering: Progress and Controversies
*Follow up to ISCT Scientific Signature Series Tracheal Bioengineering Session
(April 2014, Paris)*



Moderators:

Scott Randell, PhD ~ UNC Marsico Lung Institute/CF Center
Thomas Waddell, MD, PhD ~ University of Toronto

(20 minute talks followed by 10 min Q/A)

- 6:00-6:30 *Featured Presentation: Clinical Application of Bioengineered Trachea and Larynx*
Martin Birchall, MD ~ University College London
- 6:30-7:00 *Featured Presentation: Airway Regeneration using Aortic Homografts*
Emmanuel Martinod, MD, PhD ~ Assistance Publique – Hôpitaux de Paris
- 7:00-7:30 *Featured Presentation: Progress and Challenges in Tracheal Replacement*
Laura Niklason, MD, PhD ~ Yale University School of Medicine
- 7:30-8:00 *Featured Presentation: TBA*
TBA
- 8:00-8:30 *Featured Presentation: Recellularizing Tracheal Grafts*
Samuel Janes, MD, PhD ~ University College London
- 8:30-9:00 Discussion
- 9:00 Free night in Burlington, Dinner on Your Own

TUESDAY, JULY 28 (Location: UVM Davis Center)

6:30-7:15 AM Shuttle bus looping between Hotel Vermont and UVM Campus

6:45-7:15 Continental Breakfast and Continued Registration
Grand Maple Ballroom, Davis Center, UVM Campus

7:15-7:30 Welcome and Introduction

Session 2: Endogenous Lung Progenitor Cells

Moderator: **Jason Rock, PhD ~ University of California, San Francisco**

(30 minute talks followed by 10 min Q/A)

7:30-8:10 *Featured Presentation: Proximal Airway and Submucosal Gland Regeneration*
John Engelhardt, PhD ~ University of Iowa

8:10-8:50 *Featured Presentation: Human Airway Progenitor Cells in Health and Disease*
Renat Shaykhiev, MD, PhD ~ Weill Cornell Medical College

8:50-9:30 *Featured Presentation: Lung Cancer Stem Cells*
Mark Onaitis, MD ~ Duke University School of Medicine

9:30-10:00 BREAK

(All subsequent talks: 20 min followed by 10 min Q/A)

10:00-10:30 *Epithelial-Mesenchymal Crosstalk in Lung Fibrosis and Alveolar Homeostasis*
Christina Barkauskas, MD ~ Duke University School of Medicine

10:30-11:00 *A stepwise process regulating the neuroendocrine cell population and localization at the bifurcation points of the branching bronchioles*
Mitsuru Morimoto, PhD ~ Riken Center for Developmental Biology (CDB)

11:00-11:30 Travel Award Recipient: *Interrogating the cellular diversity and biologic properties of mouse and human nasal epithelial basal cell (NEBC) progenitors*
Dawn Bravo, PhD ~ Stanford University School of Medicine

11:30-12:00 PM Travel Award Recipient: *Defining the role of LRIG1-dependent EGFR signaling pathway inhibition in airway homeostasis and lung cancer*
Laura Sucony, BM ~ University College London

12:00-12:45 Panel Moderated Discussion: *Mouse vs Human Epithelial Progenitors*
Panelists: **Brigitte Gomperts, MD ~ Mattel Children's Hospital UCLA**
Susan Majka, PhD ~ Vanderbilt University
Susan Reynolds, PhD ~ Nationwide Children's Hospital
Barry Stripp, PhD ~ Cedars-Sinai Medical Center

12:45-2:15 Mentoring Lunch

Session 3: Embryonic Stem Cells, iPS, and Lung Regeneration

Moderator: **Wellington Cardoso, MD, PhD ~ Columbia University**

(30 minute talks followed by 10 min Q/A)

2:15-2:55 *Featured Presentation: Lung Epithelial Progenitors and Differentiated Airway Epithelia from ESCs and iPS Cells: Progress and Pitfalls*
Paul Gadue, PhD ~ Children's Hospital of Philadelphia

2:55-3:35 *Featured Presentation: Genome Editing and Disease Modeling: Applications to Studies of ESCs and iPS for Lung Diseases*
Chad Cowan, PhD ~ Harvard University

(All subsequent talks: 20 min followed by 10 min Q/A)

3:35-4:05 *TALEN-Targeted Lineage Reporters to Purify and Interrogate Human iPS-Derived Lung Progenitors*
Finn Hawkins, MBBCh ~ Boston University School of Medicine

4:05-4:35 *iPS-Derived Lung Epithelial Cells: Implications for Disease*
Amy Firth, PhD ~ Salk Institute of Biological Studies

4:35-5:00 **BREAK**

5:00-5:30 *Travel Award Recipient: Rejuvenation of aging alveolar stem cells using interrupted reprogramming*
Lily Guo, MD, MSc ~ Toronto General Hospital Research Institute

5:30-6:00 *Travel Award Recipient: Induced Pluripotent Stem Cell derived Vascular Smooth Muscle Cells Stabilizes Endothelial Vascular Network Formation*
Mirabelle S. H. Ho, PhD ~ Ottawa Hospital Research Institute

6:00-6:45 *Panel Discussion:*
Darrell Kotton, MD ~ Boston University School of Medicine
Jay Rajagopal, MD ~ Massachusetts General Hospital

6:45 **Free night in Burlington**

Shuttle bus looping between UVM Campus and Hotel Vermont

WEDNESDAY, JULY 29

6:45-7:15 AM Shuttle bus looping between Hotel Vermont and UVM Campus

7:00-7:30 Continental Breakfast

Session 4: Bioengineering Approaches to Lung Regeneration

Moderator: **Harald Ott, MD ~ Massachusetts General Hospital**

(30 minute talks followed by 10 min Q/A)

7:15-7:55 *Featured Presentation: Bioengineering Human Lung: From Screening Platforms to Whole-Lung Approaches*

Gordana Vunjak-Novakovic, PhD ~ Columbia University

7:55-8:35 *Featured Presentation: Immunologic Aspects of Lung Recellularization and Implantation*
Bryan Brown, PhD ~ University of Pittsburgh

(All subsequent talks: 20 min followed by 10 min Q/A)

8:35-9:05 *Comparative Biology of Decellularized Lung Matrix*
Jenna Balestrini, PhD ~ Yale University School of Medicine

9:05-9:35 *Bioengineering the Lung's Vasculature using hiPSC-Derived Cells*
Charlie Xi Ren, PhD ~ Massachusetts General Hospital/Harvard Medical School

9:35-10:00 BREAK

10:00-10:30 *Stiffness and Stretch Influences on Scaffold Regeneration*
Franziska Uhl, PhD ~ University of Vermont

10:30-11:00 *Anatomical and Integrin Specific Re-endothelialization within Decellularized Rodent Lungs*
Collin Stabler, PhD student ~ Temple University

11:00-11:30 Travel Award Recipient: *Advanced methods for endothelial and epithelial cell seeding and culture for whole lung tissue*
Andrew Le, PhD ~ Yale University

11:30-12:00 PM Travel Award Recipient: *Developing a Self-Assembling Vascularized Airway Organoid as a Step toward Lung Regeneration*
Qi (Eric) Tan, PhD ~ Mayo Clinic

12:00-12:45 Panel Discussion
Christine Finck, MD ~ Connecticut Children's Medical Center
Peter Lelkes, PhD ~ Temple University
Laura Niklason, MD, PhD ~ Yale University School of Medicine
Angela Panoskaltsis-Mortari, PhD ~ University of Minnesota

12:45-1:00 BREAK/Lunch distribution

1:00-1:30 *Lunchtime Featured Presentation: Lessons from Evolution: A Different Kind of Lung*
John West, MD, PhD ~ University of California – San Diego

1:30-2:00 *Publishing and ethics in stem cell research*
Graham Parker, PhD ~ Wayne State University School of Medicine

2:00-2:30 GROUP PHOTO AND BREAK

Session 5: Careers in Stem Cells, Cell Therapies, and Lung Bioengineering

Moderators:

Darcy Wagner, PhD ~ Comprehensive Pneumology Center/Ludwig Maximilians University/Helmholtz Zentrum Munich

Sarah Gilpin, PhD ~ Massachusetts General Hospital/Harvard Medical School

2:30-3:30 *Featured Presentation: Academic Careers in Lung Stem Cells/Cell Therapies/Bioengineering: Where Is This All Headed?*
Timothy Moore, MD, PhD ~ National Institutes of Health (NHLBI)
An Overview of Peer Review at the NIH Center for Scientific Review
Ghenima Dirami, PhD ~ National Institutes of Health

3:30-4:45 Poster Session

4:45-5:45 Women and Diversity Reception

4:45-5:50 Shuttle bus looping between UVM Campus and Hotel Vermont

6:00-9:00 Dinner Cruise on Lake Champlain
(Cruise Boards from 6:00-6:30 and Departs promptly at 6:30pm)

9:00 Shuttle bus returning from Cruise to Hotel Vermont

THURSDAY, July 30

6:45-7:30 AM Shuttle bus looping between hotel and UVM Campus
(Recommend bringing luggage to the meeting)

7:00-7:30 Continental Breakfast

Session 6: EPCs, MSCs, and Cell Therapy Approaches for Lung Diseases

Moderator: **Bernard Thébaud, MD, PhD ~ Ottawa Hospital Research Institute**

(30 minute talks followed by 10 min Q/A)

7:30-8:10 *Featured Presentation: Defining MSCs and EPCs: Consensus or Confusion*
Massimo Dominici, MD, President, ISCT ~ University of Modena

8:10-8:50 *Featured Presentation: Amniotic Fluid Cells and Lung Repair/Regeneration State of the Field*
Euan Wallace, MD ~ Southern Clinical School/Monash University

- 8:50-9:30 *Featured Presentation: Bone Marrow-Derived Mononuclear Cells and Lung Repair/Regeneration: State of the Field*
Fernanda Cruz, MD, PhD ~ University of Vermont
- 9:30-9:50 BREAK
- 9:50-10:30 *Update in Cell Therapy Clinical Trials for Lung Diseases and Critical Illnesses*
Kathleen Dori Liu, MD, PhD ~ UCSF School of Medicine
- 10:30-11:00 (20 minute talks followed by 10 min Q/A)
MSC Conditioned Media and the Microsome Fractions in Pre-clinical Studies of Lung Diseases
Antoine Monsel, MD ~ Hôpital Pitié Salpêtrière
- 11:00-11:30 *Amniotic Fluid Cells, Stretch, and Lung Bioengineering*
Charles Drinnan, PhD ~ University of Connecticut Health Center
- 11:30-Noon Travel Award Recipient: *Resident lung mesenchymal stromal cells are perturbed in experimental neonatal lung disease*
Kathleen Atkins ~ Ottawa Hospital Research Institute
- Noon-12:30 PM Travel Award Recipient: *Role of wnt/ β -catenin signaling at the virus-host interface in stem/progenitor cell proliferative*
Carole Schmoldt, PhD ~ University of Giessen
- 12:30-12:45 BREAK/Lunch distribution
- 12:45-1:30 Panel Discussion w/box lunch:
Daniel Chambers, MBBS, MD ~ The Prince Charles Hospital
Laszlo Farkas, MD ~ Virginia Commonwealth University
Jae-Woo Lee, MD ~ University of California, San Francisco
Duncan Stewart, MD ~ Ottawa Hospital Research Institute

Session 7: Summation and Directions

Moderator: **Darwin Prockop, MD, PhD ~ Texas A&M Health Science Center COM**

- 1:30-2:00 *Featured Presentation: Stem Cell-based Products: FDA Update*
Donald Fink, Jr., PhD ~ US Food and Drug Administration
- 2:00-3:00 Open Discussion: *Setting Priorities and Recommendations to the NIH and Other Organizations Regarding Future Research Opportunities*
- Shuttle Bus looping between UVM Campus / Hotel Vermont / Airport