

Stem Cells and Cell Therapies in Lung Biology and Lung Diseases

Supported by the National Heart, Lung, and Blood Institute, Alpha-1 Foundation,
American Thoracic Society, European Respiratory Society, Pulmonary Fibrosis Foundation,
University of Vermont College of Medicine, Vermont Lung Center

Burlington, Vermont
July 29-August 1, 2013

AGENDA

MONDAY, JULY 29

8:30-4:30 PM Hands-on workshop (Limited to 40 Participants)

5:00-6:30 PM Welcoming Reception and Registration, Sheraton Hotel

Session 1: **Emerging Topics in MSC Biology** (Location: Sheraton Hotel)
Moderator: **Armand Keating, University of Toronto**

6:30-7:00 PM Featured Speaker: **Jason Aliotta, Brown University**
The Emerging Role of Extracellular Vesicles in Intercellular Communication

7:00-7:30 Featured Speaker: **Stella Kourembanas, Harvard University**
Paracrine Effects of MSCs on Chronic Lung and Pulmonary Vascular Disease

7:30-8:00 Featured Speaker: **Luis Ortiz, University of Pittsburgh**
MSC use ARMMS to Mediate the Transfer Mitochondria in Ectosomes and Shuttle Micro
RNAs in Exosomes to Program the Innate Immunity in Lung Fibrosis

8:00-8:30 Featured Speaker: **Jahar Bhattacharya, Columbia University**
Microsomes and Mitochondria: Emerging Mechanisms of MSC Immunomodulation

8:30-9:00 Discussion

9:00 PM Free night in Burlington, Dinner on Your Own

TUESDAY, JULY 30

6:30-7:15 AM Shuttle bus looping between Sheraton 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: **Adam Giangreco, University Hospital, London**

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

7:30-8:10 AM Featured Speaker: **Harold Chapman, UCSF**
Phenotyping Airway and Alveolar Epithelial Cells

8:10-8:50 Featured Speaker: **John Engelhardt, University of Iowa**
Proximal, Submucosal, and Distal Airway Progenitors and Regeneration

8:50-9:30 Featured Speaker: **Vibha Lama, University of Michigan**
Endogenous Lung-MSCs, Fibroblast Progenitors, and Epithelial Plasticity

9:30-10:00 Break

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

10:00-10:30 **Anne-Karina Perl, Cincinnati Children's**
Regeneration of the Lung Stroma

10:30-11:00 **Jason Rock, UCSF**
Endogenous Lung Epithelial and Stromal Progenitors in Lung Regeneration

11:00-11:30 Junior Investigator ~ TBA

11:30-12:00 PM Junior Investigator ~ TBA

12:00-1:00 Panel Moderated Discussion: Pros/Cons Distal Human Airway Epithelial Progenitors

Panelists: **Andrew Hoffman, Tufts University; Jan Kajstura, Harvard University;**
Barry Stripp, Duke University

1:00-2:30 Lunch

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

Moderator: **Darrell Kotton, Boston University**

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

2:30-3:10 Featured Speaker: **Janet Rossant, University of Toronto**
Title TBD

3:10-3:50 Featured Speaker: **Aaron Zorn, Cincinnati Children's**
Xenopus as a Model for Lung Development

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

3:50-4:20 **Jay Rajagopal, Harvard University**
iPS Cells and Cystic Fibrosis

4:20-4:50 **Laertis Ikononou, Boston University**
Defining the Identity of Primordial Lung Progenitors

4:50-5:15 BREAK

5:15-5:45 Junior Investigator ~ TBA

5:45-6:15 Junior Investigator ~ TBA

6:15-7:00 Panel Moderated Discussion:

Panelists: **Brian Davis, University of Texas; Hans-Willem Snoek, Columbia University; Jeffrey Whitsett, Cincinnati Children's**

7:00 PM Free night in Burlington

WEDNESDAY, JULY 31

7:00–7:30 AM Continental Breakfast

Session 4: Bioengineering Approaches to Lung Regeneration:

Moderator: **Peter Lelkes, Temple University**

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

7:30-8:10 Featured Speaker: **Stephen F. Badylak, University of Pittsburgh**
Tissue Bioengineering

8:10-8:50 Featured Speaker: **Gordana Vunjak-Novakovic, Columbia University**
Lung Bioengineering

8:50-9:30 Featured Speaker: **Bela Suki, Boston University**
Assessing Lung Mechanics in Bioengineered Lungs

9:30-10:10 Featured Speaker: **Susan Margulies, University of Pennsylvania**
Stretch and other Environmental Approaches to Lung Bioengineering

10:10-10:30 Break

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

10:30-11:00 **Elizabeth Calle, Yale University**
Title: TBA

11:00-11:30 **Darcy Wagner, University of Vermont**
Mechanotransduction: Making the Stretch Towards Ex Vivo Lung Tissue Regeneration

11:30-12:00 PM Junior Investigator ~ TBA

12:00-12:30 PM Junior Investigator ~ TBA

12:30-2:00 Lunch and Panel discussion. Panelists: **Christine Finck, University of Connecticut;**
Joan Nichols, University of Texas Galveston; **Laura Niklason, Yale University;**
Harald Ott, Harvard University; **Angela Panoskaltsis-Mortari, University of Minnesota**

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

Moderator: **Sara Lin, NHLBI**

2:00-2:30 Featured Speaker: **James Kiley NHLBI**
Academic Careers in Lung Stem Cells/Cell Therapies/Bioengineering:
Where Is This All Headed?

2:30-5 PM Speed dating, pairing of junior and senior investigators
Poster session

5:00-5:45 Featured Speaker: **Martin Birchall, University Hospital London**
Clinical Use of Bioengineered Tracheas: Promise and Challenges

7:00-9:00 Dinner Cruise on Lake Champlain

THURSDAY, August 1

7:00-7:30 AM Continental Breakfast

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

Moderator: **Daniel Chambers, University of Queensland**

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

7:30-8:10 Featured Speaker: **Amer Rana, Cambridge University**
Endothelial Progenitors: State of the Field

8:10-8:50 Featured Speaker: **Patricia Rocco, Federal University of Rio de Janeiro**
Clinical Trials of MSCs in Lung Diseases in Brazil

8:50-9:30 Featured Speakers: **Michael Matthay, UCSF** and **Duncan Stewart, Ottawa Research**
Update and Pros/Cons of Clinical Trials with MSCs and ESCs

9:30-9:50 BREAK

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

9:50-10:20 **Claudia dos Santos, University of Toronto**
Therapeutic Use of MSCs in Sepsis

10:20-10:50 **Jae-Woo Lee, UCSF**
Mechanisms of MSC actions in alleviating acute lung injury

10:50-11:20 **Diego Alvarez, South Alabama**
Endogenous pulmonary vascular progenitor cells

11:20-11:50 Junior Investigator ~ TBA

11:50-12:20 PM Junior Investigator ~ TBA

12:20-12:50 Panel discussion: Panelists: **Conrad Liles, University of Washington; Éva Mezey, NIH/NIDCR; Duncan Stewart, Ottawa Research; Mervin Yoder, University of Indiana**

12:50-1:15 Break and pick up box lunch

Session 7: Summation and Directions

Moderator: **Darwin Prockop, Texas A&M**

1:15-1:30 Featured Speaker: **Ed Morrissey, University of Pennsylvania**
NHLBI LRRC

1:30-1:45 Featured Speaker: **Mahendra Rao, NIH**
Lung Studies in the NIH Center for Regenerative Medicine

1:45-2:30 Open Discussion: Setting Priorities and Recommendations to the NIH and Other Organizations Regarding Future Research Opportunities

2:30 PM Awards Presentation and Conclusion