Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Diseases
July 24-27, 2017
Hosted by: University of Vermont, Burlington, Vermont

AGENDA

MONDAY, JULY 24

9:00-4:00 PM  Practical/Theoretical Course: Coordinated by Weiss Laboratory at UVM
   Hands-on workshop, Rowell Building, UVM Campus
   - General lung harvest and processing
   - Decellularization and recellularization
   - Flexivent / Lung mechanics
   - Industry-sponsored technologies (TBD)

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

Session I: Extracellular Vesicles in Lung Regenerative Medicine
(Location: Sheraton)
Moderators:
Robert Freishtat, MD, MPH ~ George Washington University School of Medicine and Health Sciences, Washington, DC
Deniz Bölükbaş, PhD Candidate ~ Columbia University, New York, NY

6:00-6:10 PM  Opening Remarks
   E. Thomas Sullivan, JD, President, University of Vermont, Burlington, Vermont
   Darcy Wagner, PhD, Conference Chair ~ Comprehensive Pneumology Center, Munich, Germany

6:10-6:40   Featured Presentation: Mesenchymal stem cell-derived extracellular vesicles: a potential new tool in regenerative medicine
   Bernd Giebel, PhD ~ University Clinic Essen, Germany

6:40-7:10   Featured Presentation: MSC therapy: transiting from cell to exosome
   Sai Kiang Lim, PhD ~ A*STAR Institute of Medical Biology, Singapore

7:10-7:40   Featured Presentation: A Clinical Indications Prediction (CLIP) Scale for Human MSCs
   Donald Phinney, PhD ~ The Scripps Research Institute, Jupiter, Florida

7:40-8:00   Discussion
   Free night in Burlington, Dinner on Your Own
TUESDAY, JULY 25 ~ Dame Julia Polak Memorial Bioengineering Session
(Location: Grand Maple Ballroom, Davis Center, UVM Campus)

7:30-8:15 AM  Shuttle bus looping between Sheraton Hotel and UVM Campus
8:00-8:45    Continental Breakfast and Continued Registration
8:45-9:00    Welcome and Introduction
              David V. Rosowsky, PhD, PE, FASCE, FSEI, Provost, University of Vermont
              Frederick C. Morin III, MD, Dean, Robert Larner, M.D. College of Medicine

Session II:  Ex Vivo Bioengineering Lung and Airway Tissue
              Moderators:
              Sarah Gilpin, PhD ~ Massachusetts General Hospital, Boston, Massachusetts
              Juan José Uriarte, PhD ~ University of Vermont, Burlington, Vermont

9:00-9:40    Featured Presentation: Molecular and Cellular Composition of Murine and Human Lungs in Health and Disease
              Herbert Schiller, PhD ~ Comprehensive Pneumology Center, Munich, Germany

9:40-10:10    Featured Presentation: Recent advances in lung bioengineering using acellular scaffolds
              Harald Ott, MD ~ Massachusetts General Hospital, Boston, Massachusetts

10:10-10:30  Junior Investigator Presentation: Platforms and technologies for hollow organ tissue engineering
              Claire Crowley, PhD ~ University College London, London, England

10:30-10:50  Travel Award Recipient: #1
10:50-11:10  Travel Award Recipient: #2
11:10-11:40  COFFEE and NETWORKING BREAK

Session III:  Bioengineering Next Generation Devices for Lung Diseases
              Moderator:
              Jason Bates, PhD ~ University of Vermont, Burlington, Vermont

11:40-12:00  Featured Presentation: Lung on a chip
              Ramon Farré, PhD ~ University of Barcelona, Barcelona, Spain

12:00-12:20 PM  Junior Investigator Presentation: Towards the development of a bioartificial lung
              Michael Pflaum, PhD ~ Hannover Medical School, Hanover, Germany

12:20-12:40  Featured Presentation: Imaging the Lung during Development - LungMAP
              David Warburton, MD ~ Children’s Hospital Los Angeles, California

12:40-1:00  Travel Award Recipient: #3
1:00-2:30    MENTORING LUNCH

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Session IV: **Endogenous Progenitor Cells**
Moderators:
Christina Barkauskas, MD ~ Duke University, Durham, North Carolina

2:30-3:15  
*Featured Presentation: Towards Somatic Epithelial Stem Cell Therapy for Cystic Fibrosis*  
Scott Randell, PhD ~ University of North Carolina Chapel Hill, North Carolina

3:15-3:45  
*Featured Presentation: Tissue tension, RANKL, mammary stem cells and breast cancer risk*  
Jason Northey, PhD ~ University of California San Francisco, California

3:45-4:05  
*Junior Investigator Presentation: Lung stem cell niches in health and disease*  
Joo Hyeon-Lee, PhD ~ Cambridge Stem Cell Institute, Cambridge, UK

4:05-4:25  
COFFEE and NETWORKING BREAK

4:25-4:50  
*Travel Award Recipient (John W. Walsh Memorial Travel Scholarship Awardee)*  
Introduction and Presentation by the Alpha-1 Foundation  
TBD

4:50-5:10  
Travel Award Recipient: #4

5:10-5:30  
Travel Award Recipient: #5

5:30-6:00  
Panel Discussion and Wrap Up  
Melanie Königshoff ~ University of Colorado Denver, Colorado  
Angela Panoskaltsis-Mortari, PhD ~ University of Minnesota, Minneapolis, MN  
TBD

6:00-8:00  
WOMEN AND DIVERSITY RECEPTION  
Jennifer Collins, PhD ~ Erasmus MC, Rotterdam, Netherlands

6:00-10:00  
Hop on the free Trolley Tours bus for a trip downtown. Bus will make continuous loops from the Davis Center, the Sheraton and Downtown Burlington.  
Free night in Burlington, Dinner on Your Own
WEDNESDAY, JULY 26

8:30-9:00 AM  Shuttle bus looping between Sheraton Hotel and UVM Campus
8:30-9:00  Continental Breakfast

Session V:  iPSC and ESC Biology and Application in Lung Regenerative Medicine
Moderators:
Amy Firth, PhD ~ University of Southern California, Los Angeles, California
Finn Hawkins, MBBCh ~ Boston University, Boston, Massachusetts

9:00-9:40  Featured Presentation: Generation of human pluripotent stem cell-derived airway organoids to model cystic fibrosis in vitro
Katherine McCauley, PhD ~ Boston University, Boston, Massachusetts

9:40-10:10  Featured Presentation: Cystic fibrosis disease specific iPSC reporter lines for disease modelling, HT screening and cellular therapies
Ruth Olmer, PhD ~ Hannover Medical School, Hanover, Germany

10:10-10:30  Junior Investigator Presentation: CRISPR-modified iPS cells to validate new targets for cystic fibrosis
Hongmei Lisa Li, PhD ~ Boston Children’s Hospital, Boston, Massachusetts

10:30-10:50  COFFEE and NETWORKING BREAK

10:50-11:10  Travel Award Recipient: #6

Session VI:  New Conference Feature: Elevator Pitch Competition – Commercialize Your Research for Industry Sponsorship or SBIR/STTR Collaboration
Panel:
Yvonne Janssen-Heininger, PhD, University of Vermont, Burlington, Vermont
Kerry Swift, MS, Office of Technology Commercialization, University of Vermont
Erik Monsen, PhD, University of Vermont and selected members from small business

11:10-11:50  One Minute Elevator Pitch Competition for Junior Trainees. 1 slide allowed; 1 minute buzzer.
Panel of Senior Investigators and VT Tech Commercialization Group to judge.
Prize award: Registration Fee refunded (two awards)

11:50-12:00  GROUP PHOTO AND BREAK

12:00-12:40 PM  LUNCH

12:40-1:40  Thematic Poster Session #1 – Bioengineering, Endogenous Progenitor Cells, and ESC/iPS
Poster Discussion Facilitators:
Collin Stabler, PhD ~ University of Pennsylvania, Philadelphia, Pennsylvania
Michael Pflaum, PhD ~ Hannover Medical School, Hanover, Germany
Franziska Uhl, PhD ~ University of Vermont, Burlington, Vermont

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Session VII: **Regulation of Stem Cell and Regenerative Medicine Treatments**

~ co-sponsored by the International Society for Cellular Therapies

Moderators:
Laertis Ikonomou, PhD ~ Boston University, Boston, Massachusetts
Kathleen Atkins, MD student ~ University of Toronto, Canada

1:40-2:15  
**Featured Presentation: U.S. Clinics Marketing Unproven “Stem Cell” Interventions: Ethical, Scientific, and Regulatory Concerns**
Leigh Turner, PhD ~ University of Minnesota, Minneapolis, Minnesota

2:15-2:45  
**Featured Presentation: Unproven Cell Therapies**
Massimo Dominici, MD ~ International Society for Cellular Therapy, Modena, Italy

2:45-3:10  
**Featured Presentation: Complications After Intravitreal “Stem Cell” Injection at a “Stem Cell” Clinic**
Ajay Kuriyan, MD, MS ~ University of Rochester Medical Center, Rochester, New York

3:10-3:40  
**Asian Presentation: Regulatory developments and trends in cell based medicine**
Doug Sipp, BA ~ RIKEN Center for Developmental Biology, Tokyo, Japan

3:40-4:00  
COFFEE and NETWORKING BREAK

4:00-4:30  
**Panel Discussion**
Martin Birchall, MD ~ University College London, London, England
Marilyn Glassberg, MD ~ University of Miami School of Medicine, Florida
Michael Matthay, MD ~ University of California San Francisco, California
ISCT Members

4:30-5:30  
**Thematic Poster Session #2 – Cell Therapies, Clinical Trials, Commercialization and Regulation**
Poster Discussion Facilitators:
Jennifer Collins, PhD ~ Erasmus MC, Rotterdam, Netherlands
Fernanda Cruz, MD PhD ~ Federal University of Rio de Janeiro, Brazil

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

9:00  
Shuttle bus returning from Cruise to the Sheraton / UVM lodging
THURSDAY, July 27

8:30-9:00 Continental Breakfast

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

Moderators:
Jennifer Collins, PhD ~ Erasmus MC, Rotterdam, Netherlands

9:00-9:25 *An Overview of Peer Review Process at NIH Center for Scientific Review*
Ghenima Dirami, PhD ~ National Institutes of Health, Bethesda, Maryland

9:25-9:50 **NIH Grant Mechanisms**
Neil Aggarwal, MD ~ National Heart, Lung, and Blood Institute, Bethesda, Maryland

9:50-10:15 *Small Business Funding Mechanisms*
Matthew McMahon, PhD ~ Office of Translational Alliances and Coordination (OTAC) Director; National Heart, Lung, and Blood Institute, Bethesda, Maryland

10:15-10:45 *Featured Presentation: SBIR/STTR Case Example*
Yvonne Janssen-Heininger, PhD ~ University of Vermont, Burlington, Vermont

10:45-11:10 COFFEE and NETWORKING BREAK

Session IX: **Cell Therapies (MSCs, EPCs, and ASC) in Lung Disease**

Moderators:
Marilyn Glassberg, MD ~ University of Miami Miller School of Medicine, Florida
Fernanda Cruz, MD, PhD ~ Federal University of Rio de Janeiro, Brazil

11:10-11:40 *Featured Presentation: Mesenchymal Stromal Cells: Biology and Potential Therapeutic Value for ARDS*
Michael Matthay, MD ~ University of California San Francisco, California

11:40-12:10 PM *Featured Presentation: Cell Based Gene Therapies for Pulmonary Disorders: Manufacturing Perspectives for Canadian Clinical Trials*
Dave Courtman, PhD ~ Ottawa Hospital Research Institute, Ottawa, Ontario, Canada

12:10-12:30 *Junior Investigator Presentation*
TBD

12:30-12:50 Travel Award Recipient: #7

12:50-1:20 LUNCH

1:20-1:40 Travel Award Recipient: #8

1:40-2:00 Travel Award Recipient: #9

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2:00-3:00  Open Discussion - Setting Priorities and Recommendations to the NIH and Other Organizations Regarding Future Research Opportunities

Daniel Weiss, MD, PhD ~ University of Vermont, Burlington, Vermont