Stem Cells, Cell Therapies, and Bioengineering in Lung Biology
PRE-CONFERENCE WORKSHOP ~ July 15, 2019

Track 1: Practical/Theoretical Course on State-of-the-Art Methods in Stem Cells, Cell Therapies, and Bioengineering
Led by: Darcy Wagner, PhD, Lund University and Dan Weiss, PhD, University of Vermont

9:00-11:45 AM Rotating Stations for Laboratory Techniques:
- Decellularization of rodent lungs (Dan Weiss Lab)
- Virtual Reality for Single Cell Seq (Shamit Soneji Lab)
- Preparations for precision cut lung slices (Darcy Wagner lab)
- 4D Imaging (Darcy Wagner Lab)
- Gene editing (Amy Firth Ryan Lab)
- Ex vivo culture (Sarah Gilpin)
- Industry-sponsored technologies (TBD)

12:00-1:00 PM Lunch with industry representatives
1:00-2:30 Rotating Stations for Laboratory Techniques: (as above)
2:30-2:45 Coffee and networking break
2:45-4:00 Rotating Stations for Laboratory Techniques: (as above)

Track 2: Professional Skills Course: Introduction to Technology Commercialization and Business Communication
Led by: Chelsea Magin, PhD, University of Colorado Denver and Erik Monsen, PhD, University of Vermont

9:00-10:00 AM Innovation and Product Conceptualization at the Benchtop
Adam Feinberg, PhD, Associate Professor, Arthur Hamerschlag Career Development Professor, Departments of Biomedical Engineering and Materials Science and Engineering, Carnegie Mellon University

10:00-11:00 Commercializing your Technology: A Guide for Academic Researchers
Joan Herbers, PhD, Professor Emeritus, The Ohio State University

11:00-11:45 Lost in Translation: Moderated Discussion with Drs. Feinberg and Herbers addressing the challenges of commercializing research using examples from our audience.
Chelsea Magin, PhD, University of Colorado Denver; Erik Monsen, PhD, University of Vermont

12:00-1:00 PM Lunch with industry representatives
1:00-2:30 Elevator Pitch Workshop
Our panel will coach you through the dos and don’ts of a wining elevator pitch. Then we will work in teams to hone these skills. Each team will have a fact sheet describing their technology. They will develop and deliver a pitch to our panel for critique.

2:30-2:45 Coffee and networking break
2:45-3:15 Transitioning from Academia to a Commercial Product, Common Regulatory Pitfalls
Robert Lindblad, MD, Chief Medical Officer, Production Assistance for Cellular Therapies

3:15-4:00 Commercializing Innovations by Balancing the Intersection of Science and Finance
Ethan E. Mann, PhD, Vice President of Marketing and Sales, Sharklet Technologies, Inc.
AGENDA

MONDAY, JULY 15

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

Session I: Understanding Lung Stem Cells in the Digital Age
(Location: Hotel Vermont)
Moderator:
Mattias Magnusson, PhD ~ Lund University

6:00-6:10 PM Opening Remarks
Darcy Wagner, PhD, Conference Chair ~ Lund University, Lund, Sweden and University of Vermont, Burlington, Vermont

6:10-6:40 Featured Presentation: TBD (Late Breaking Paper on Lung Single Cell Seq)
Laura Niklasen, MD, PhD ~ Yale University School of Medicine

6:40-7:10 Featured Presentation: Visualizing Single Cell Gene Networks with Virtual Reality
Shamit Soneji, PhD ~ Lund University, Lund, Sweden

7:10-7:40 Featured Presentation: Transcriptomic Landscape of the Blastema Niche in Regenerating Adult Axolotl Limbs at Single-Cell Resolution
Nicholas Leigh, PhD ~ Harvard Medical School, Brigham and Women’s

7:40-8:00 Discussion
Free night in Burlington, Dinner on Your Own
TUESDAY, JULY 16 ~ Dame Julia Polak Memorial Bioengineering Session
(Location: Grand Maple Ballroom, Davis Center, UVM Campus)

7:45-8:30 AM Shuttle bus looping between Hotel Vermont and UVM Campus
8:00-8:45 Continental Breakfast and Continued Registration
8:45-9:00 Welcome and Introduction
Gordon L. Jensen, MD, PhD, Senior Associate Dean for Research ~
The Larner College of Medicine at the University of Vermont

Session II: Building Up the Complexity of the Lung: Assessing Lung Stem and
Progenitor Cells Using 3D Models
Moderators:
Sarah Gilpin, PhD ~ Massachusetts General Hospital, Harvard Medical School
Ya-Wen Chen, PhD ~ University of Southern California, Keck School of Medicine

9:00-9:30 Featured Presentation: 3D Bioprinting of Trachea
Adam Feinberg, PhD ~ Carnegie Mellon University

9:30-10:00 Featured Presentation: Applications of hiPSCs to Airway and Alveolar Disease Modeling
Shimpei Gotoh, MD, PhD ~ Kyoto University

10:00-10:20 Travel Award Presentation #1
Decision announced in May

10:20-10:50 COFFEE and NETWORKING BREAK

Session III: Stem Cell Niche Interactions

10:50-11:20 Featured Presentation: Stem Cell Niche Interactions
Susan Reynolds, PhD ~ Nationwide Children’s Hospital

11:20-11:50 Featured Junior Presentation: Senolytic Drugs Target Alveolar Epithelial Cells and Attenuate
Pulmonary Fibrosis in an Ex Vivo Lung Model
Mareike Lehmann, MD, PhD ~ Comprehensive Pneumology Center, Munich

11:50-12:10 PM Travel Award Presentation #2
Decision announced in May
12:10-12:40 PM  **Elevator Pitch Competition – Commercialize Your Research for Industry Sponsorship or SBIR/STTR Collaboration**
Panel:
Erik Monsen, PhD ~ University of Vermont and selected members from small business
Chelsea Magin, PhD ~ University of Colorado Denver

*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. Two prizes awarded.*

12:40-2:00  **MENTORING LUNCH**

2:00-3:00  **Thematic Poster Session #1 – Bioengineering, Endogenous Progenitor Cells, and ESC/iPS**
Poster Discussion Facilitators:
Johnatas Dutra Silva, MSc, PhD ~ Queen’s University Belfast
Jinho Kim, PhD ~ Stevens Institute of Technology
Mareike Lehmann, PhD ~ University of Munich

**Session IV: Towards the Development of New Therapies using Lung Stem Cells for Cystic Fibrosis**
Co-sponsorship by the Cystic Fibrosis Foundation

Moderators:
Amy (Firth) Ryan, PhD ~ University of Southern California
Brian Davis, PhD ~ University of Texas Health Science Center

3:00-3:30  **Featured Presentation: iPS Cells: Relevant Models on the Road to Cell-Based Therapies**
John (Jed) Mahoney, PhD ~ Cystic Fibrosis Foundation

3:30-4:00  **Featured Junior Presentation: Defining Human Basal Cell Heterogeneity in Normal and Diseased Lung**
Gianni Carraro, PhD ~ Cedars-Sinai Medical Center

4:00-4:20  **Travel Award Presentation #3**
Decision announced in May

4:20-4:40  **Travel Award Presentation #4**
Decision announced in May

4:40-5:00  **Panel Discussion**
Session V: **Careers in Stem Cells, Cell Therapies, and Lung Bioengineering – Part I**

Moderators:
Sara Rolandsson Enes, PhD ~ University of Vermont
Kim Vanuytsel, PhD ~ CReM

5:00-5:45 PM *Featured Presentation: Gender Equity in STEM: Why is This So Hard?*
Joan Herbers, PhD ~ The Ohio State University

6:00-8:00 WOMEN AND DIVERSITY PANEL DISCUSSION AND RECEPTION
Sara Rolandsson Enes, PhD ~ University of Vermont
Kim Vanuytsel, PhD ~ CReM

8:00 Free night in Burlington, Dinner on your own
WEDNESDAY, JULY 17

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

**Session V:  Careers in Stem Cells, Cell Therapies, and Lung Bioengineering – Part II**

**Concurrent Sessions**

9:00-10:00  Finding a Position and Starting Your Own Lab

9:00-10:00  Funding and Financial Management of Your Lab

10:00-10:15  COFFEE BREAK

**Concurrent Sessions**

10:15-10:45  Publishing and Reviewing for a Medical Journal
Diana Stanley, MD ~ Deputy Editor, Lancet Respiratory Medicine

10:15-10:45  Pre-Print Servers: What Are They and How Can They Help Your Research and Visibility?
Richard Sever, PhD ~ Assistant Director, Cold Spring Harbor Laboratory Press and Co-Founder, bioRxiv

10:45-11:00  COFFEE BREAK

**Session VI:  Bringing Cell and Tissue-Derived Products to Market: Regulation and Commercialization of Regenerative Medicine Products**

Co-sponsored by the ISCT, International Society for Cell & Gene Therapy

**Moderators:**
Laertis Ikonomou, PhD ~ Boston University
Chelsea Magin, PhD ~ University of Colorado, Denver

11:00-11:30  Featured Presentation: Regenerative Medicine Cellular Products - How Can PACT Help?
Robert Lindblad, MD ~ NHLBI Progenitor Cell Translational Consortium (PACT)

11:30-12:00 PM  Featured Presentation: Engineered T Cells in the Clinic
Bruce Levine, PhD ~ University of Pennsylvania

12:00-12:20  Travel Award Presentation #5
Decision announced in May

12:20-1:30  GROUP PHOTO AND LUNCH

1:30-2:30  Thematic Poster Session #2 – Cell Therapies, Clinical Trials, Commercialization and Regulation
Poster Discussion Facilitators:
Johnatas Dutra Silva, MSc, PhD ~ Queen’s University Belfast
Jinho Kim, PhD ~ Stevens Institute of Technology
Mareike Lehmann, PhD ~ University of Munich
Session VII: Immunomodulation Via Cell Therapy and Cell-Derived Extracellular Vesicles (MSCs, EPCs, and ASC)
Moderator:
Anna Krasnodembskaya, PhD ~ Queen’s University Belfast

2:30-3:00 PM  
Featured Presentation: Mesenchymal Stromal Cells for Chronic Lung Disease of Prematurity: Are We There Yet?
Bernard Thébaud, MD, PhD ~ Ottawa Hospital Research Institute

3:00-3:30  
Featured Presentation: Immunomodulatory Effect of MSC EVs in Lung Disease
Stella Kourembanas, MD ~ Boston Children’s Hospital

3:30-3:50  
Travel Award Presentation #6
Decision announced in May

3:50-4:10  
Travel Award Presentation #7
Decision announced in May

4:10-4:40  
Panel Discussion

Session VIII: Publishing and Communicating with Stem Cells, Cell Therapies and Bioengineering

4:40-5:10  
Journal Editor Presentations
Donald Phinney, PhD ~ Senior Editor Cytotherapy, Official Journal of the ISCT, International Society for Cell and Gene Therapy
Richard Sever, PhD ~ Assistant Director, Cold Spring Harbor Laboratory Press
Diana Stanley, MD ~ Deputy Editor, Lancet Respiratory Medicine

5:10-5:30  
Panel Discussion with Editors

5:30-6:00  
Bus to dinner cruise

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 lodging locations.
THURSDAY, July 18

8:30-9:00 AM   Continental Breakfast

**Session IX: New Strategies for Cellular Delivery**

9:00-9:30  *Featured Presentation: Novel Cell and Cell-Derived Therapies to Treat the Vasculature*
Shibani Pati, MD, PhD ~ University of California, San Francisco

9:30-10:00  *Featured Junior Presentation: Epithelial Stem Cells in Lung Transplantation*
Kalpaj Parekh, MBBS ~ University of Iowa

10:00-10:20  *Travel Award Presentation #8*
Decision announced in May

10:20-10:50  COFFEE and NETWORKING BREAK

**Session X: Visualizing Lung Regeneration**
Moderator:
John Stegmayr, PhD ~ Lund University

10:50-11:20  *Featured Presentation: Live Imaging of Alveologenesis in Precision-Cut Lung Slices Reveals Dynamic Epithelial Cell Behaviour*
Charlotte Dean, PhD ~ Imperial College London

Galina Gusarova, PhD ~ Columbia College of Physicians

11:50-12:10 PM  *Travel Award Presentation #9*
Decision announced in May

12:10-12:20  Pick up BOX LUNCH

12:20-2:00  *Open Discussion - Setting Priorities and Recommendations to the NIH and Other Organizations Regarding Future Research Opportunities*
Daniel Weiss, MD, PhD ~ University of Vermont