



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

July 12-15, 2021

Hosted by: The University of Vermont

AGENDA

(All times given are EDT – other time-zone agenda versions will be available before the conference.)

MONDAY, JULY 12

Session I: Technological Advances for *in situ* Analysis of Tissues

Moderators:

Ruben Dries, PhD ~ Boston University

Mattias Magnusson, PhD ~ Lund University

- 10:00-10:10 AM Opening Remarks
Suresh V. Garimella, PhD, President, University of Vermont
- 10:10-10:40 *Featured Presentation: High-Spatial-Resolution Multi-Omics Atlas Sequencing*
Yang Liu, PhD ~ Yale University
- 10:40-11:10 *Featured Presentation: Live-cell Single Particle Imaging*
Timothée Lionnet, PhD ~ New York University Langone Medical Center
- 11:10-11:40 *Featured Presentation: Multimodal Imaging of Subcellular Structures in the Mouse Lung*
Vera Hutchison, BA ~ MD Anderson Cancer Center
- 11:40-12:00 *Panel Discussion*

Session II: Therapeutic Immunomodulation of the Lung

Moderator:

Erica Herzog, MD, PhD ~ Yale School of Medicine

- 1:00-1:30 PM *Featured Presentation: Therapeutic Potential of Lung Spheroid Cells and Vesicles*
Ke Cheng, PhD ~ University of North Carolina Chapel Hill
- 1:30-2:00 *Featured Presentation: Alveolar Macrophages: Roles in Disease Pathogenesis and Therapeutic Intervention*
Bruce Trapnell, MD ~ Cincinnati Children's Hospital Medical Center
- 2:00-2:30 *Featured Presentation: Localization of Macrophages in the Human Lung via Design-based Stereology*
Patrick Hume, MD, PhD ~ National Jewish Health
- 2:30-2:45 *Outstanding Abstract Achievement Award Presentation: Mesenchymal Stromal Cells Reduce Lung Endothelial Injury and Protein Permeability in Patients with ARDS*
Katherine D. Wick, MD ~ University of California, San Francisco
- 2:45-3:05 *Panel Discussion*
- 3:15-4:30 PM **TRAINEE NETWORKING EVENT**

TUESDAY, JULY 13

Session III: New Insights into Cellular Plasticity in the Lung

Moderator:

Robert Hynds, PhD ~ University College London

- 9:45-10:00 AM Welcome and Introduction
Richard L. Page, MD, Dean ~ The Lerner College of Medicine at the University of Vermont
- 10:00-10:30 AM *Featured Presentation: Organoid Modeling of Lung Disease and Lung Cancer*
Carla Kim, PhD ~ Children's Hospital Boston
- 10:30-11:00 *Featured Presentation: Role of CLDN18 in Cellular Plasticity in the Lung*
Zea Borok, MD ~ University of Southern California
- 11:00-11:15 *Outstanding Abstract Achievement Award Presentation: Newly Emergent Apelin Expressing Endothelial Stem-like Cells Orchestrate Lung Microvascular Regeneration*
Liyuan Wang, PhD ~ Ottawa Hospital Research Institute
- 11:15-11:35 *Panel Discussion*
- 11:45-12:30 PM **“Minute to Win It” Competition – Commercialize Your Research for Industry Sponsorship or SBIR/STTR Collaboration**
Moderators:
Ben Calvert, PhD ~ University of Southern California
Thomas Lynch, PhD ~ University of Iowa
- Introductory Remarks
Kirk Dombrowski, PhD, Vice President for Research ~ The University of Vermont
- Panel of Senior Investigator Judges:
Erik Monsen, PhD, MBA ~ Grossman School of Business, University of Vermont
Kirk Dombrowski, PhD ~ University of Vermont
Enid Neptune, MD ~ Johns Hopkins
Angela Panoskaltsis-Mortari, PhD ~ University of Minnesota
Justin Crotty, PhD, JD ~ Saul Ewing Arnstein & Lehr LLP
- One Minute Elevator Pitch Competition for Junior Trainees.
1 slide allowed: 1-minute buzzer. Two prizes awarded.*
- 12:30-1:30 **MENTORING/MEET THE FACULTY**

Session IV: [Stem Cell Signaling in Lung Remodeling](#)

Moderator:

Naftali Kaminski, MD ~ Yale University School of Medicine

- 1:30-2:00 PM *Featured Presentation: Of Mice and Men: The Role of the Niche in Driving Basal Cell Metaplasia in Lung Fibrosis*
Tien Peng, MD ~ University of California San Francisco
- 2:00-2:30 *Featured Presentation: Lung Epithelial Repair in Pulmonary Fibrosis: Insights from Single-Cell Biology*
Jonathan Kropski, MD ~ Vanderbilt University Medical Center
- 2:30-2:45 *Outstanding Abstract Achievement Award Presentation: Dual Isolation of Proximal and Distal Lung Epithelial Progenitor Cells and Their Distribution in Intact Murine Lungs Visualized Using Light Sheet Microscopy*
Hani N. Alsafadi, BSc ~ Lund University
- 2:45-3:00 *Panel Discussion*
- 3:00-4:15 **Poster Session #1**
Poster Discussion Facilitators:
Mareike Lehmann, PhD ~ University of Munich
Darcy Wagner, PhD ~ Lund University
- Poster Judges:
Deniz Bölükbaş, PhD ~ Lund University
Ben Calvert, PhD ~ University of Southern California
Sara Rolandsson Enes, PhD ~ Lund University
Allison Greaney, PhD ~ Yale University
Claudia Loebel, MD, PhD ~ University of Pennsylvania
Franziska Olm, PhD ~ Lund University
Sinem Tas, PhD ~ Lund University

Session V: [Careers in Stem Cells, Cell Therapies, and Lung Bioengineering](#) [- Part I](#)

Moderator:

Zea Borok, MD ~ University of Southern California

- 4:15 PM Welcome - **Gordon L. Jensen, MD, PhD, Senior Associate Dean for Research ~ The Larner College of Medicine at the University of Vermont**
- 4:20-4:50 *Featured Presentation: Pursuing Translational Biomedical Science in an Academic Lab*
Gordana Vunjak-Novakovic, PhD ~ Columbia University
- 5:00-6:00 **WOMEN AND DIVERSITY PANEL AND NETWORKING**
Sarah Mojarad, MS ~ University of Southern California
Zea Borok, MD ~ University of Southern California
Anne Dixon, BM BCh ~ University of Vermont Medical Center
Patricia Sime, MD, FRCP ~ Virginia Commonwealth University
Patricia Rieken Macêdo Rocco, MD, PhD ~ Federal University of Rio de Janeiro
Aina Martin-Medina, PhD ~ Balearic Islands Health Research Institute (IdISBa)

WEDNESDAY, JULY 14

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

Concurrent Breakfast Sessions

- 9:30-10:30 *Finding a Position and Starting Your Own Lab – Panel Discussion*
Jaime Hook, MD ~ Icahn School of Medicine at Mount Sinai
Marko Nikolić, MD, PhD ~ University College London
Gregg Duncan, PhD ~ University of Maryland
- 9:30-10:30 *Funding and Financial Management of Your Lab – Panel Discussion*
Brian Cunniff, PhD ~ University of Vermont
Dimitry Kremetsov, PhD ~ University of Vermont
Bridget Carney, BS ~ Grant Proposal Manager, University of Vermont

Session VII: Matrix Biomechanics and Stem Cell Dynamics in Lung Health and Disease

Moderators:

Jin-Ah Park, PhD ~ Harvard University
Darcy Wagner, PhD ~ Lund University, University of Vermont

- 10:30-11:00 *Featured Presentation: Dysregulation of Alveolar Type 2 Cells by Aberrant Cell Quality Control and ER Stress in IPF*
Mike Beers, MD ~ University of Pennsylvania
- 11:00-11:30 *Featured Presentation: Advances in 3D Bioprinting and Cellularization of Functional Lung Scaffolds for Transplantation*
Sarah Gilpin, PhD ~ United Therapeutics
- 11:30-11:45 *Outstanding Abstract Achievement Award Presentation: Lung MSC from Idiopathic Pulmonary Fibrosis Patients Present Signs of Mitochondrial Dysfunction and an Attenuated TGF β Response on Mitochondrial and Extracellular Matrix*
Aina Martin-Medina, PhD ~ Balearic Islands Health Research Institute (IdISBa)
- 11:45-12:05 PM *Panel Discussion*
- 12:15-1:30 **Poster Session #2**
Mareike Lehmann, PhD ~ University of Munich
Darcy Wagner, PhD ~ Lund University
- Poster Judges:
Deniz Bölükbaş, PhD ~ Lund University
Johnatas Dutra Silva, PhD ~ Queen's University Belfast
Renata Jurkowska, PhD ~ Cardiff University
Mareike Lehmann, PhD ~ University of Munich
Aina Martin-Medina, PhD ~ Balearic Islands Health Research Institut (IdISBa)
Charlie Ren, PhD ~ Carnegie Mellon University
John Stegmayr, PhD ~ Lund University
Jennifer Sucre, PhD ~ Vanderbilt University Medical Center

Session VIII: Dame Julia Polak Memorial Bioengineering Session **Engineering Models of Lung Disease and Regeneration**

Moderators:

Steven Skolasinski, MD ~ University of Minnesota

Janette Burgess, PhD ~ University Medical Center Groningen

- 1:30-2:00 PM *Featured Presentation: Engineering Hybrid-Hydrogels to Model Chronic Pulmonary Diseases In Vitro*
Chelsea M. Magin, PhD ~ University of Colorado, Denver | Anschutz
- 2:00-2:30 *Featured Presentation: Modelling Hyperoxia Induced Lung Injury*
Jennifer Sucre, MD ~ Vanderbilt University Medical Center
- 2:30-3:00 *Featured Junior Presentation: Lung-Chip Models of Airway Disease*
Janna Nawroth, PhD ~ University of Southern California
- 3:00-3:15 *Outstanding Abstract Achievement Award Presentation: Development and Characterization of Bioengineered Lung Organoid to Model Small Cell Lung Cancer*
Chandani Sen, PhD ~ University of California, Los Angeles
- 3:15-3:35 *Panel Discussion*

Session IX: Direct-to-Consumer Cell-based Interventions for Respiratory Diseases: Stratagems and Countermeasures

Moderators:

Leigh Turner, PhD ~ University of Minnesota

Sarah Mojarad, MS ~ University of Southern California

- 3:45-4:05 PM *Featured Presentation: The Evolving Global Landscape of Unproven Cell-based Products and Services*
Laertis Ikonomou, PhD ~ State University of New York at Buffalo
- 4:05-4:25 *Featured Presentation: Non-trial Pre-Approval Access for Cell-based Interventions: Regulatory and Ethical Considerations*
Patti Zettler, JD ~ The Ohio State University
- 4:25-4:45 *Featured Presentation: Physician Perspectives on Unproven Stem Cell and Regenerative Therapies and Their Approaches to Consult Patients*
Zubin Master, PhD ~ Mayo Clinic
- 4:45-5:15 *Panel Discussion*

THURSDAY, JULY 15

Session X: Careers in Stem Cells, Cell Therapies, and Lung Bioengineering – Part III

Concurrent Breakfast Sessions

- 9:30-10:30 AM *Meet the Editors – Panel Discussion.*
Graham Parker, PhD ~ Stem Cells and Development
Donald Phinney, PhD ~ Cytotherapy
Prithi Rajan, PhD ~ Cell Stem Cell
- 9:30-10:30 *Navigating Funding Mechanisms – Panel Discussion*
Laurel Kuxhaus, PhD ~ National Science Foundation
John Sheridan, PhD ~ Cystic Fibrosis Foundation
Sara Lin, PhD ~ NIH, National Heart, Lung and Blood Institute
Sandy Snyder, MSN ~ Congressionally Directed Medical Research Programs, Department of Defense, US Army
- 9:30-10:30 *Alternative Careers to Academic Science – Panel Discussion*
Tushar Menon, PhD ~ Associate Director, Vertex Pharmaceuticals
Christine Gould, PhD ~ Scientific Director, Health Interactions
Aaron Parker, JD, PhD ~ Director, Intellectual Property and Transactions, Artiva
- ### **Session XI: Differentiating and Delivering Stem Cell Therapeutics to the Lung**
- Moderators:*
John Mahoney, PhD ~ Cystic Fibrosis Foundation Therapeutics
Thomas Lynch, PhD ~ University of Iowa
- 10:30-11:00 AM *Featured Presentation: In vivo Differentiation of Respiratory Cell Lineages from Embryonic Stem Cells via Blastocyst Complementation*
Vlad Kalinichenko, MD, PhD ~ Cincinnati Children’s Hospital Medical Center
- 11:00 -11:30 *Featured Presentation: Matrix-directed Paracrine Modulation by Mesenchymal Stromal Cells to Treat Lung Injury*
Jae-Won Shin, PhD ~ University of Illinois at Chicago
- 11:30-12:00 *Featured Junior Presentation: Hybrid Hydrogels for Lung Stem Cell Regeneration*
Deniz Bölükbaş, PhD ~ Lund University
- 12:00-12:20 *Panel Discussion*

Session XII: [Aging Lung](#)

Moderators:

Mareike Lehmann, PhD ~ University of Munich

Victor Thannickal, MD ~ Tulane University School of Medicine

- 12:30-1:00 PM *Featured Presentation: ER Stress and Aging of the Lung*
Mauricio Rojas, MD ~ The Ohio State University
- 1:00-1:30 *Featured Presentation: Impact of Vascular Aging on Lung Fibrosis Resolution*
Giovanni Ligresti, PhD ~ Boston University
- 1:30-1:45 *Outstanding Abstract Achievement Award Presentation: High-resolution Genome-wide Transcriptomic and Epigenetic Profiling across Disease Stages Identifies Novel Regulators of COPD*
Renata Jurkowska, PhD ~ Cardiff University
- 1:45-2:05 *Panel Discussion*

Session XIII: [Regeneration in Response to Viral Infection](#)

Moderators:

Jaime Hook, MD ~ Icahn School of Medicine at Mount Sinai

Andrew Vaughan, PhD ~ University of Pennsylvania School of Veterinary Medicine

- 2:15-2:45 PM *Featured Presentation: Pluripotent Stem Cells to Model Lung Development and Disease*
Darrell Kotton, MD ~ Center for Regenerative Medicine (CREM) at Boston University and Boston Medical Center
- 2:45-3:15 *Featured Presentation: Remestemcel-L for Acute Respiratory Distress Syndrome (ARDS) due to COVID-19 in patients on Invasive Mechanical Ventilation*
Silviu Itescu, MBBS FRACP ~ mesoblast
- 3:15-3:30 *Outstanding Abstract Achievement Award Presentation: Pro-inflammatory Neutrophils Impair Barrier Integrity and Increase SARS-CoV-2 Viral Load in Proximal Airway Epithelial Cells*
Ben Calvert, PhD ~ University of Southern California
- 3:30-3:50 *Panel Discussion*

Session XIV: [Concluding Discussion](#)

Moderator:

Daniel J. Weiss, MD, PhD ~ University of Vermont

- 4:00-5:30 PM *Open Discussion - Setting Priorities and Recommendations to the NIH and Other Organizations Regarding Future Research Opportunities*