

**Welcome to the 20<sup>th</sup> Annual Retreat**  
of the  
**International Graduate Programme**  
**Molecular Biology and Medicine of the Lung**



**Rauischholzhausen, Germany**  
**June 26-28, 2024**



**MBML**  
MOLECULAR BIOLOGY  
& MEDICINE OF THE LUNG



**UGMLC**  
UNIVERSITIES OF  
GIESSEN & MARBURG  
LUNG CENTER

## **WEDNESDAY, 26.06.2024**

### **Up to 09:30**

Arrival at Rauschholzhausen Castle, Registration

### **09:30 - 09:45**

Welcome and Introduction: Elie El Agha and Werner Seeger

### **09:45 - 10:45**

*The Opening Lecture*

**STEVEN M. CORSELLO**

Stanford Cancer Center, Stanford, CA, U.S.A.

“Genome-inspired drug repurposing”

### **10:45 - 12:00**

**Student Presentations – Block A**

**PULMONARY HYPERTENSION AND RIGHT HEART FAILURE**

### **12:00 -13:30**

**Room check-in, followed by lunch**

### **13:30 - 14:30**

*The Editor’s Lecture*

**LARISSA A. SHIMODA**

Editor-In-Chief, *American Journal of Physiology-Lung Cellular and Molecular Physiology*

Johns Hopkins University, Baltimore, MD, U.S.A.

“Non-canonical roles for channels and transporters in pulmonary hypertension: An editor's journey”

### **14:30 - 15:30**

**Student Presentations – Block B**

**HYPOXIA AND OXYGEN SENSING**

### **15:30 - 15:45**

Group photograph (all *Annual Retreat* participants)

### **15:45 - 17:00**

Poster session, with coffee and snacks

### **17:00 - 18:00**

**JOSEPH A. LASKY**

Tulane University School of Medicine, New Orleans, LA, U.S.A.

“Is there a role for RNA splicing in the pathobiology of pulmonary fibrosis?”

### **18:00 - 19:15**

**Student Presentations - Block C**

**LUNG FIBROSIS**

### **19:15 – end**

Dinner and open bar

**THURSDAY, 27.06.2024**

**07:30 - 09:00**

Breakfast

**09:00 - 10:00**

**MATTHEW J. THOMAS**

Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany

“Advances in pulmonary fibrosis drug discovery: What does good look like?”

**10:00 - 11:15**

**Student Presentations - Block D**

**LUNG PROGENITOR CELLS AND REGENERATION**

**11:15 - 11:45**

Coffee and snacks

**11:45 - 12:45**

**PAUL G. THOMAS**

St. Jude Children's Research Hospital, Memphis, TN, U.S.A.

“Stromal and immune interactions in the generation and resolution of lung pathology”

**12:45 - 13:45**

Lunch

**13:45 - 15:00**

**Student Presentations – Block E**

**ACUTE RESPIRATORY DISTRESS SYNDROME**

**15:15 – 16:45**

Coffee pick-up leading to the “Meet-the-Expert” sessions

**16:45 - 17:45**

**DARCY E. WAGNER**

Wallenberg Centre for Molecular Medicine, Lund University, Lund, Sweden

“TBA”

**17:45 - 19:00**

**Student Presentations – Block F**

**LUNG DEVELOPMENT AND BRONCHOPULMONARY DYSPLASIA**

**19:00 – 19:15**

Breather

**19:15 – 20:15**

*The Nobel Evening Lecture*

**MELISSA PARKE**

Executive Director of International Campaign to Abolish Nuclear Weapons, Geneva, Switzerland

“Nuclear risks are health risks”

**20:15 – end**

Dinner, open bar and entertainment

**FRIDAY, 28.06.2024**

**07:30 - 09:00**

Breakfast

**09:00 – 10:00**

**CHARLES A. POWELL**

Icahn School of Medicine at Mount Sinai, New York, NY, U.S.A.

“From bench to bedside: How advances in lung cancer biology boost patient survival”

**10:00 - 11:00**

**Student Presentations - Block G**

**LUNG CANCER**

**11:00 - 11:30**

Coffee and snacks

**11:30 - 12:15**

**Student Presentations – Block H**

**CHRONIC OBSTRUCTIVE PULMONARY DISEASE**

**12:15 - 12:45**

Presentation of MBML coursework certificates and poster prizes

Formal closing of the Retreat: Elie El Agha and Werner Seeger

**12:45 - 15:00**

**Room check-out (until 14:00) and lunch**

**15:00**

Bus Departure from Rauschholzhausen to Giessen

Meeting Point: Parking Lot of the Castle (14:50)

## A) PULMONARY HYPERTENSION AND RIGHT HEART FAILURE

Wednesday, June 26<sup>th</sup>, at 10:45

Chairs: Daniel Kalina and Zahraa Msheik

10:45 - 11:00: [Vanessa Kleinhenn](#) (PI: Norbert Weissmann)

“Role of RBPJ in *Acta2*-specific cells in pulmonary hypertension”

11:00 - 11:15: [Samuel Olapoju](#) (PI: Soni Savai Pullamsetti)

“Therapeutic modulation of MST1/2 kinases reverses pulmonary hypertension via RhoA/actin cytoskeleton dysregulation”

11:15 - 11:30: [Leila Sotoodeh Atefi](#) (PI: Saverio Bellusci)

“Identification of the origin of PH-associated ACTA2-positive vascular smooth muscle cells”

11:30 - 11:45: [Sailun Wang](#) (PI: Ralph T. Schermuly & Baktybek Kojonazarov)

“Metabolic signaling pathways in adaptive/maladaptive right ventricle remodeling”

11:45 - 12:00: [Daniel Zedler](#) (PI: Manuel Richter & Khodr Tello)

“Clinical relevance of right atrial functional response to treatment in pulmonary arterial hypertension”

## B) HYPOXIA AND OXYGEN SENSING

Wednesday, June 26<sup>th</sup>, at 14:30

Chairs: Isabell Valerie Burhorst and Ali Khadim

14:30 - 14:45: [Anis Čilić](#) (PI: Norbert Weissmann)

“The role of adenylate kinase 4 in pulmonary hypertension”

14:45 - 15:00: [Muchen Li](#) (PI: Norbert Weissmann & Natascha Sommer)

“The role of *Uqcrh* in acute and chronic oxygen sensing in pulmonary vasculature”

15:00 - 15:15: [Zahraa Msheik](#) (PI: Soni Savai Pullamsetti)

“Micropeptide forming lncRNA16 & lncRNA19 - Major regulators of cellular responses to hypoxia in the lung”

15:15 - 15:30: [Ornella Yamdjeu Tchokonde](#) (PI: Norbert Weissmann)

“O<sub>2</sub>-sensing in hypoxic pulmonary vasoconstriction - Deciphering the molecular mechanisms with focus on voltage-dependent K<sup>+</sup> channels”

## C) LUNG FIBROSIS

Wednesday, June 26<sup>th</sup>, at 18:00

Chairs: Alejandro Egea Zorrilla and Vinita Sharma

18:00 - 18:15: [Natalie Baumann](#) (PI: Markus Weckmann, *DZL ARCN Campus Borstel*)

“Serum high sensitivity C-reactive protein in evaluating cystic fibrosis lung disease progression and lung inflammation”

18:15 - 18:30: [Bhavika B. Katariya](#) (PI: Poornima Mahavadi)

“Novel roles of RNA binding proteins in idiopathic pulmonary fibrosis”

18:30 - 18:45: [Dongzhu Li](#) (PI: Ana Pardo-Saganta)

“Implication of clonal hematopoiesis of indeterminate potential to the pathophysiology of idiopathic pulmonary fibrosis”

18:45 - 19:00: [Khaled Abdulrahim Talal Mahmoud](#) (PI: Eveline Baumgart-Vogt)

“Influence of peroxisomes in macrophages on inflammatory and pro-fibrotic processes in the lung”

19:00 - 19:15: [Mahsa Zabihi](#) (PI: Elie El Agha)

“Role of lipofibroblasts in the development and resolution of pulmonary fibrosis”

## D) LUNG PROGENITOR CELLS AND REGENERATION

Thursday, June 27<sup>th</sup>, at 10:00

Chairs: Spyridoula Barmpoutsi and Sandipan Jash

10:00 - 10:15: [Alejandro Egea Zorrilla](#) (PI: Ana Pardo-Saganta)

“A profibrotic Notch signal derived from alveolar epithelial cells is essential for the development of pulmonary fibrosis”

10:15 - 10:30: [Ali Khadim](#) (PI: Elie El Agha)

“Mesenchymal cells in lung development and repair”

10:30 - 10:45: [Afshin Noori](#) (PI: Saverio Bellusci)

“Precision cut lung slices: An in vitro model of acute lung injury? Evidence from epithelial changes”

10:45 - 11:00: [Mahtab Shahriari Felordi](#) (PI: Elie El Agha)

“Tracing the origin of RSMCs in airway epithelial regeneration”

11:00 - 11:15: [Esmeralda Vásquez Pacheco](#) (PI: Saverio Bellusci)

“Highlighting fibroblast plasticity in lung fibrosis: the WI-38 cell line as a model for investigating the myofibroblast and lipofibroblast switch”

## E) ACUTE RESPIRATORY DISTRESS SYNDROME

Thursday, June 27<sup>th</sup>, at 13:45

Chairs: Vidya Lakshmi and Efthymios Fousekis-Papakonstantinou

13:45 - 14:00: Deepesh Dhakad (PI: Ali Önder Yildirim, *DZL CPC-M Campus Munich*)

“Macrophage dependent susceptibility to Chronic Lung Disease(s) post SARS-CoV-2 infection”

14:00 - 14:15: Mohammad Estiri (PI: Susanne Herold & Ulrich Matt)

“Impact of diffusible signals at human cell-microbe interfaces: Influence of EVs in organoids and in in-vivo models”

14:15 - 14:30: Georgios Kiliaris (PI: Elie El Agha)

“Mobilization of mesenchymal niches in influenza virus-induced lung injury”

14:30 - 14:45: Peter Pennitz (PI: Martin Witzernath, *DZL-Associated site Charité Berlin*)

“Neural network-assisted humanization of COVID-19 hamster transcriptomic data reveals matching severity states in human disease”

14:45 - 15:00: Edith Plucinski (PI: Lavinia Neubert & Jan C. Kamp, *DZL BREATH Campus Hannover*)

“Understanding the impact of macrophages on lung transplant outcomes”

## F) LUNG DEVELOPMENT AND BRONCHOPULMONARY DYSPLASIA

Thursday, June 27<sup>th</sup>, at 17:45

Chairs: Edma Loku and Mahtab Shahriari Felordi

17:45 - 18:00: Mohammad Amin Mahjoub (PI: Miguel A. Alejandre Alcázar)

“Investigating the role of notch signaling pathway in experimental BPD”

18:00 - 18:15: Ophelia Aubert (*Guest speaker, University Hospital Leipzig*)

“Fetal tracheal occlusion normalizes NF-κB and YAP signaling and restores epithelial differentiation in congenital diaphragmatic hernia”

18:15 - 18:30: Eleni Bouloukou (PI: Christos Samakovlis)

“Conversion of basal cells to the neuroendocrine trajectory”

18:30 - 18:45: Martha Candoni (PI: Norbert Weissmann & Natascha Sommer)

“The role of iNOS in normal and aberrant lung development”

18:45 - 19:00: Stephanie Stephan (PI: Miguel A. Alejandre Alcázar)

“Investigating the macrophage-alveolar epithelial type II cells interplay in hyperoxia-induced neonatal lung injury”

## G) LUNG CANCER

Friday, June 28<sup>th</sup>, at 10:00

Chairs: Afaq Mushtaq and Henrike Treis

10:00 - 10:15: [Philipp Friedrich Arndt](#) (PI: Rajkumar Savai)

“Metabolic reprogramming of tumor-associated macrophages and its impact on lung cancer progression”

10:15 - 10:30: [Spyridoula Barmpoutsis](#) (PI: Rajkumar Savai)

““Do not eat me” LILRB4 signaling as a novel macrophage immunotherapy in lung cancer”

10:30 - 10:45: [Dario Frey](#) (PI: Ursula Klingmüller, *DZL TLRC Campus Heidelberg*)

“Targeting the EGFR-MET axis in NSCLC: From cell signaling dynamics to therapeutic strategies”

10:45 - 11:00: [Ayoson Joshua](#) (PI: Rajkumar Savai)

“CD8 T cell subpopulation ‘Tc17’ induces a metabolic enriched microenvironment enabling lung cancer progression”

## H) CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Friday, June 28<sup>th</sup>, at 11:30

Chairs: Aysan Ezaddoustdar and Esmeralda Vásquez Pacheco

11:30 - 11:45: [Vidya Lakshmi](#) (PI: Norbert Weissmann & Natascha Sommer)

“Mitochondrial cytochrome c oxidase subunit 4 isoform 2 regulates T-cell activation and hyperinflammation during virus-induced exacerbation following smoke exposure”

11:45 - 12:00: [Edma Loku](#) (PI: Norbert Weissmann & Stefan Hadzic)

“Developmental fibroblast growth factor 10 in pathogenesis and reversion of emphysema and PH in COPD”

12:00 - 12:15: [Vinita Sharma](#) (PI: Norbert Weissmann)

“Exploring the role of macrophage recruitment in COPD-associated pulmonary hypertension”

## Speaker Introductions and Speaker Session Chairs

**STEVEN M. CORSELLO** by Vanessa Kleinhenn

**JOSEPH A. LASKY** by Bhavika B. Katariya

**MELISSA PARKE** by Alejandro Egea Zorrilla

**CHARLES A. POWELL** by Philipp Friedrich Arndt

**LARISSA A. SHIMODA** by Ornella Yamdjeu Tchokonde

**DARCY E. WAGNER** by Stephanie Stephan

**PAUL G. THOMAS** by Ali Khadim

**MATTHEW J. THOMAS** by Daniel Kalina

## Poster Presentations

Students: Please hang posters during lunch (12:00-13:30) prior to the poster session.

Poster board number	Presenter (Wednesday, 26 <sup>th</sup> June 2024, 15:45-17:00)
1	<b>Gowtham Boosarpu</b> (PI: Bernd Schmeck & Mareike Lehmann) "Studying exacerbation of pneumonia due to COPD using organoids and PCLS"
2	<b>Isabell Valerie Burhorst</b> (PI: Bernd Schmeck & Anna Lena Jung) "Extracellular vesicles in pneumogenic ARDS"
3	<b>Amine Chahin</b> (PI: Mareike Lehmann) "Lung aging in COPD and IPF"
4	<b>Aysan Ezaddoustdar</b> (PI: Malgorzata Wygrecka) "The role of epiregulin in lung fibrosis"
5	<b>Efthymios Fousekis-Papakonstantinou</b> (PI: Mareike Lehmann) "Role of extracellular vesicles in aging-associated chronic lung diseases"
6	<b>Sandipan Jash</b> (PI: Natascha Sommer) "Cause and consequences of cytochrome c oxidase (COX) remodelling in lung disease"
7	<b>Daniel Kalina</b> (PI: Malgorzata Wygrecka) "Characterization of the bleomycin-induced pulmonary fibrosis model in rats"
8	<b>Afaq Mushtaq</b> (PI: Margarida M. Barroso & Susanne Herold) "Stem cell research and pulmonary infectious diseases"
9	<b>Jamal Nabhanizadeh</b> (PI: Rajkumar Savai & Norbert Weissmann) "Navigating the spatiotemporal molecular landscape of lung tumor progression through multiomics analysis"
10	<b>Victoria Kehinde Ogungbemi-Alt</b> (PI: Ulrich Matt & Susanne Herold) "Controlling plasticity of alveolar macrophages for cell-based therapy in lung injury"
11	<b>Henrike Treis</b> (PI: Norbert Weissmann & Stefan Hadzic) "Heme oxygenase-1: Bridging antioxidant defence & anti-inflammation in COPD"

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