

Welcome to the 14th Annual Retreat
of the
International Graduate Programme
Molecular Biology and Medicine of the Lung



Rauischholzhausen, Germany
July 20-22, 2016



WEDNESDAY, 20.07.2016

Up to 09:30

Arrival at Rauschholzhausen Castle, Registration

09:30 - 09:45

Welcome and Introduction: Rory E. Morty and Werner Seeger

09:45 - 10:45

The Opening Lecture

EWALD R. WEIBEL (University of Bern, Bern, Switzerland)

“What alveolar cells do to make a good lung: Lessons for tissue engineering”

10:45 - 12:00

Student Presentations – Block A

LUNG DEVELOPMENT: ALVEOLARIZATION AND BRONCHOPULMONARY DYSPLASIA

12:00 -13:15

Lunch

13:15 - 14:00

WELLINGTON V. CARDOSO (Columbia University, New York, U.S.A.)

“Regulation of airway progenitor cell fate in lung development and disease”

14:00 - 15:15

Student Presentations – Block B

NEO-ALVEOLARIZATION, PARENCHYMAL DAMAGE, AND GRAFT REJECTION

15:15 - 16:45

Poster session, with coffee and snacks

16:45 - 17:30

The Editor’s Lecture

PAUL W. NOBLE (Cedars-Sinai Medical Center, Los Angeles, U.S.A.)

Associate Editor: THE JOURNAL OF CLINICAL INVESTIGATION

“New insights into the pathogenesis of pulmonary fibrosis: Lessons from the matrix”

17:30 - 18:30

Student Presentations – Block C

DIFFUSE PARENCHYMAL LUNG DISEASE

18:30 - 19:30

The Nobel Lecture in Physiology or Medicine

CHRISTIANE NÜSSLEIN-VOLHARD

Max Planck Institute for Developmental Biology, Tübingen, Germany

Recipient of the *Nobel Prize in Physiology or Medicine* in 1995

“The development of colour pattern in fishes: Towards an understanding of the evolution of beauty”

19:30 - end

Dinner and open bar

THURSDAY, 21.07.2016

07:30 - 08:45

Breakfast

08:45 - 09:30

JULIE BASTARACHE (Vanderbilt University Medical Center, Nashville, U.S.A.)
“Cell-free hemoglobin is a novel mediator of acute lung injury”

09:30 - 10:30

Student Presentations - Block D

ACUTE LUNG INJURY: BIOMARKERS AND ION TRANSPORT

10:30 - 11:00

Coffee and snacks

11:00 - 12:05

Student Presentations – Block E

LUNG INJURY: DAMAGE, CROSS-TALK, AND VIRAL INFECTION

12:05 - 12:50

The Global Health Lecture

CHRISTOPHER M. DYE

Director: Strategy, Policy & Information

Office of the Director-General, World Health Organisation, Geneva, Switzerland

“From AIDS to Zika: New ideas to fight modern plagues”

12:50 - 14:00

Lunch

14:00 - 15:00

The Nobel Lecture in Chemistry

ROGER Y. TSIEN (University of California at San Diego, San Diego, U.S.A.)

Recipient of the *Nobel Prize in Chemistry* in 2008

“Molecules against cancer or for long-term memory”

15:00 - 15:15

Group photograph

15:15 - 16:45

“Meet-the-Professor” sessions, with coffee and snacks

16:45 - 18:30

Student Presentations – Block F (including “breather”)

LUNG CANCER

18:30 - 19:15

The Public Diplomacy Lecture

His Excellency, Ambassador **AHMET ÜZÜMCÜ**

Director-General: ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS, The Hague, Netherlands

Recipient of the *Nobel Peace Prize* in 2013

“Peace and security: Working together towards a world free from chemical weapons”

19:30 – end

Dinner and Drinks

FRIDAY, 22.07.2016

07:30 - 09:00

Breakfast

09:00 - 09:45

MARTIN WILKINS (Imperial College, London, U.K.)

“Using genetics and circulating biomarkers to hunt down new drug targets for pulmonary arterial hypertension”

09:45 - 11:05

Student Presentations – Block G

CARDIAC REMODELLING AND HEART FAILURE

11:05 - 11:30

Coffee and snacks

11:30 - 12:45

OLGA VAGIN (University of California at Los Angeles, Los Angeles, U.S.A.)

“FXVD5 *O*-glycosylated ectodomain impairs alveolar epithelial barrier function by disrupting cell-cell trans-dimerization of Na,K-ATPase β 1 subunits”

12:45 - 14:00

Student Presentations – Block H

PULMONARY HYPERTENSION

14:00 - 14:15

Presentation of MBML coursework certificates

Formal closing of the Retreat: Rory E. Morty and Werner Seeger

14:15 - 15:15 (open-ended)

Lunch

15:30

Bus Departure from Rauschholzhausen to Giessen

Meeting Point: Parking Lot of the Castle 15:25

A) LUNG DEVELOPMENT: ALVEOLARIZATION AND BRONCHOPULMONARY DYSPLASIA

Wednesday, July 20th, at 10:45

Chairs: José Alberto Rodríguez Castillo and İpek Vartürk

10:45 - 11:00: [Claudio Nardiello](#) (PI: Rory E. Morty)

“Modelling bronchopulmonary dysplasia in mice: how much oxygen is enough?”

11:00 - 11:15: [Aglaia Ntokou](#) (PI: Katrin Ahlbrecht)

“Targeting the Perilipin2 cell-lineage during murine alveolarisation”

11:15 - 11:30: [Vahid Kheirollahi](#) (PI: Saverio Bellusci)

“Insulin like growth factor signalling in lung development and disease”

11:30 - 11:45: [Agnieszka Pożarska](#) (PI: Rory E. Morty)

“The accessory type III transforming growth factor- β receptor in post-natal lung alveolarisation”

11:45 - 12:00: [David Surate Solaligue](#) (PI: Rory E. Morty)

“Roles for the miR-29 family in normal and aberrant post-natal lung alveolarisation”

B) NEO-ALVEOLARIZATION, PARENCHYMAL DAMAGE, AND GRAFT REJECTION

Wednesday, July 20th, at 14:00

Chairs: David Surate Solaligue and Claudia Fernanda García Castro

14:00 - 14:15: [José Alberto Rodríguez Castillo](#) (PI: Katrin Ahlbrecht)

“Characterization and targeting of fibroblast subsets during compensatory lung regrowth in adult mice”

14:15 - 14:30: [Elsa Tadele Roxlau](#) (PI: Norbert Weißmann)

“The effects of electronic cigarette vapour exposure on primary isolated lung cells”

14:30 - 14:45: [Maryam Keshavarz](#) (PI: Wolfgang Kummer)

“Caveolin-1 and caveolin-3: structural and functional insights into their role in murine airway smooth muscle constriction”

14:45 - 15:00: [Kristin Mitschke](#) (PI: Florian Länger/Danny Jonigk; *DZL Hannover Campus*)

“Workup and biobanking of fresh human lung explants”

15:00 - 15:15: [Martin Reichert](#) (PI: Veronika Grau)

“Humoral immunity in experimental chronic lung allograft dysfunction”

C) AGEING AND DIFFUSE PARENCHYMAL LUNG DISEASE

Wednesday, July 20th, at 17:30

Chairs: David Brunn and Jennifer Schneider

17:30 - 17:45: [Irina Shalashova](#) (PI: Andreas Günther)

“The role of ATF6 in the pathogenesis of lung fibrosis”

17:45 - 18:00: [Olivier Burgy](#) (PI: Philippe Bonniaud, University of Burgundy, Dijon, France)*

“De-glycosylated bleomycin has the antitumor activity of bleomycin without pulmonary toxicity”

18:00 - 18:15: [Vanessa Welk](#) (PI: Melanie Königshoff, DZL Munich Campus)

“Proteasome activator 200 is dysregulated in fibrotic remodelling of the lung”

18:15 - 18:30: [Claudia Fernanda García Castro](#) (PI: Norbert Weißmann)

“The role of mitochondria in aging of the lung and development of COPD”

*Visiting external student/fellow.

D) ACUTE LUNG INJURY: BIOMARKERS AND ION TRANSPORT

Thursday, July 21st, at 09:45

Chairs: Christina Malainou and Stefan Ringshandl

09:30 - 09:45: [Joel Brennan McNeil](#) (“Brennan”) (PI: Julie Bastarache, Vanderbilt University Medical Center, Nashville, U.S.A.)*

“Non-invasive sampling of the airspace proteome using HME filter condensate in mechanically ventilated patients with ARDS”

09:45 - 10:00: [Vitalii Kryvenko](#) (PI: István Vadász)

“Hypercapnia reduces Na,K-ATPase β -subunit cell surface abundance by causing ER retention of the protein”

10:00 - 10:15: [Paulina Gwoździńska](#) (PI: István Vadász)

“AMP-activated protein kinase and extracellular signal-regulated kinase 1/2 mediate hypercapnia-induced poly-ubiquitination and endocytosis of ENaC in the alveolar epithelium”

10:15 - 10:30: [Anca Amati](#) (PI: Veronika Grau)

“The chemokines CCL3, CCL4 and CCL5 efficiently inhibit ATP-induced release of interleukin-1 β from human monocytic cells”

*Visiting external student/fellow.

E) LUNG INJURY: DAMAGE, CROSS-TALK, AND VIRAL INFECTION

Thursday, July 21st, at 11:00

Chairs: Marina Aznaourova and Vitalii Kryvenko

11:00 - 11:15: [Stephanie Dobersch](#) (PI: Guillermo Baretto)

“High mobility group protein-mediated transcription requires DNA damage marker γ -H2AX”

11:15 - 11:35: [Yoko Ito](#) (Department of Medicine, National Jewish Health, Denver, U.S.A.)*

“The role of HGF in injury and repair: the interaction between alveolar epithelial cell and fibroblasts”

11:35 - 11:50: [Ana Ivonne Vázquez Armendariz](#) (PI: Susanne Herold and Jürgen Lohmeyer)

“Establishment of a 3D *in vitro* lung organoid model to study lung generation and GM-CSF dependent regeneration after influenza virus-induced injury”

11:50 - 12:05: [Parker Woods](#) (PI: Gökhan Mutlu, University of Chicago, Chicago, U.S.A.)**

“Inhibition of lung tissue non-specific alkaline phosphatase attenuates influenza-induced acute lung injury”

*Recipient of the **Best Paper MBML Travel Scholarship** of the *American Journal of Physiology – Lung Cellular and Molecular Physiology*.

**Visiting external student/fellow.

F) LUNG CANCER

Thursday, July 21st, at 16:45

Chairs: Stephanie Dobersch and Katrin Bedenbender

16:45 - 17:00: [Sarode Poonam Ashwin Kumar](#) (PI: Rajkumar Savai)

“Reprogramming of tumour-associated macrophages by modulating Wnt/ β -catenin signalling in lung cancer”

17:00 - 17:15: [Addi Josua Romero Olmedo](#) (PI: Guillermo Baretto)

“ITGA2 as a marker for lung cancer”

17:15 - 17:30: [Mira Yasemin Gökyildirim](#) (PI: Katja Hattar)

“LPS induces radiotherapy resistance in a NSCLC cell line: the role of protein kinase activation”

17:30 - 17:45: [David Brunn](#) (PI: Rajkumar Savai)

“The role of interferon regulatory factor 9 in lung cancer progression and metastasis”

17:45 – 18:00 “Breather”

18:00 - 18:15: [Dmytro \(“Dima”\) Dvornikov](#) (PI: Ursula Klingmüller, *DZL Heidelberg Campus*)

“Modelling of TGF- β pathway dynamics in lung cancer cells”

18:15 - 18:30: [Swetlana Scheufele](#) (PI: Ole Ammerpohl, *DZL Cluster North Campus*)

“Aberrant DNA methylation in the diagnostics of non-small cell lung cancer”

G) CARDIAC REMODELLING AND HEART FAILURE

Friday, July 22nd, at 09:45

Chairs: Chanil Valasarajan and Stefan Hadžić

09:45 - 10:00: Mario Böhm (PI: Ralph T. Schermuly)

“Genetic ablation of inducible nitric oxide synthase attenuates pulmonary hypertension-associated right ventricular fibrotic remodelling”

10:00 - 10:15: Mamazhakypov, Argen (PI: Ralph T. Schermuly)

“The role of osteopontin in pressure overload-induced right ventricular remodelling”

10:15 - 10:30: Ozus Lohani (PI: Michael Yeager, University of Colorado, Denver, U.S.A.)*

“Gap junction connexin-43 mislocalization and α -actinin expressional changes in the right ventricle: potential contributors to right heart failure in pulmonary hypertension”*

10:30 - 10:45: Ujjwal Deo (PI: Ralph T. Schermuly)

“Inflammatory cell-derived microparticles in chronic lung diseases: novel promising biomarkers and carriers of pathological information *via* micro RNAs?”

10:45 - 11:05: Andrea Frump (PI: Tim Lahm, Indiana University, Indianapolis, U.S.A.)**

“A cardioprotective estrogen receptor α -apelin axis mediates salutary effects of 17 β -estradiol on right ventricular function in pulmonary hypertension”

*Visiting external student/fellow.

Recipient of the **Best Paper MBML Travel Scholarship of the *American Journal of Physiology – Lung Cellular and Molecular Physiology*.

H) PULMONARY HYPERTENSION

Friday, June 22nd, at 12:45

Chairs: Mario Böhm and Dinesh Reddy Yerabolu

12:45 - 13:00: Chanil Valasarajan (PI: Soni Pullamsetti)

“Role of long non-coding RNAs in the pathogenesis of pulmonary hypertension”

13:00 - 13:15: Alireza Saraji (PI: Norbert Weißmann)

“The role of mitochondrial mitophagy in development of pulmonary hypertension”

13:15 - 13:30: İpek Vartürk (PI: Norbert Weißmann)

“Does SPARC play a role in pulmonary vascular remodelling underlying pulmonary hypertension?”

13:30 - 13:45: Changwu Lu (PI: Ralph T. Schermuly)

“Effects of Nintedanib on vessel remodelling in experimental pulmonary hypertension”

13:45 - 14:00: Aleksander Petrovic (PI: Ralph T. Schermuly)

“Role of carbonic anhydrases in hypoxia- and non-hypoxia-induced pulmonary hypertension”

Speaker Introductions and Speaker Session Chairs

EWALD R. WEIBEL by Claudio Nardiello

WELLINGTON R. CARDOSO by Vahid Kheirollahi

PAUL W. NOBLE by David Surate Solaligue

CHRISTIANE NÜSLEIN-VOLHARD by Stefan Hadžić

JULIE BASTARACHE by Ana Ivonne Vázquez Armendariz

ROGER Y. TSIEN by David Brunn

AMBASSADOR ÜZÜMCÜ by İpek Vartürk

MARTIN WILKINS by Mario Böhm

OLGA VAGIN by Vitalii Kryvenko

Poster Presentations

| Poster board number | Presenter (Wednesday, 20 th July, 2016: 15.15-16:45) |
|---------------------|---|
| 1 | Nasim Alebrahimdelkordi (PI: Norbert Weißmann) |
| 2 | Marina Aznaourova (PI: Bernd Schmeck) |
| 3 | Katrin Bedenbender (PI: Bernd Schmeck) |
| 4 | Eistine Boateng (PI: Eveline Baumgart-Vogt) |
| 5 | Janga Harshavardhan (PI: Bernd Schmeck) |
| 6 | Stefan Hadžić (PI: Norbert Weißmann) |
| 7 | Sagar Kesireddy (PI: Andreas Günther) |
| 8 | Matthias Klös (visiting student. PI: Irina Lehmann, Helmholtz Centre for Environmental Research, Leipzig, Germany) |
| 9 | Nicola Krause (PI: Norbert Weißmann) |
| 10 | Ettore Lignelli (PI: Rory Morty) |
| 11 | Christina Malainou (PI: Susanne Herold and Jürgen Lohmeyer) |
| 12 | Francesco Palumbo (PI: Rory E. Morty) |
| 13 | Alexander Perniß (PI: Wolfgang Kummer) |
| 14 | Stephan Ringshandl (PI: Bernd Schmeck) |
| 15 | Jennifer Schneider (PI: Małgorzata Wygrecka) |
| 16 | Dinesh Reddy Yerabolu (PI: Ralph T. Schermuly) |

Students: Please hang posters during lunch (12:00-13:15) prior to the poster session.