

**Welcome to the 7<sup>th</sup> Annual Retreat**

of the

**International Graduate Program**

**“Molecular Biology and Medicine of the Lung”**

**(MBML)**

incorporating the

**International Max Planck Research School for Heart and Lung Research**



**Rauischholzhausen,  
July 27-29, 2009**

**MONDAY, 27.07.2009**

**Up to 10:00**

Arrival at the Castle of Rauischholzhausen, Registration

**10:00 – 10:30**

**Welcome and Introduction: Rory E. Morty and Werner Seeger**

**10:30 – 11:15**

**STEVEN ABMAN** (University of Colorado, Denver, USA)

“Pulmonary vascular disease during development: mechanisms and clinical implications”

**11:15 - 12:30**

**Student Presentations:**

**PULMONARY VASCULAR DISEASE I**

**12:30 -14:00**

Lunch

**14:00 - 14:45**

**DEAN SHEPPARD** (University of California, San Francisco, USA)

“Regulation of acute lung injury by epithelial and endothelial integrins”

**14:45 - 16:15**

**Student Presentations**

**ACUTE LUNG INJURY: ALVEOLAR ION AND FLUID TRANSPORT**

**16:15 - 16:45**

Coffee Break

**16:45 - 17:45**

**Student Presentations**

**LUNG FIBROSIS**

**17:45 - 18:45**

The Nobel Lecture  
by Professor Sir Timothy Richard Hunt

**19:00 - end**

Dinner and Drinks

**TUESDAY, 28.07.2009**

**07:30 - 09:00**

Breakfast

**09:00 – 09:45**

**STEVEN HOLGATE** (Southampton General Hospital, Southampton, UK)  
“Rethinking the pathogenesis of asthma”

**09:45 - 10:45**

**Student Presentations**

**INFLAMMATION**

**10:45 - 11:15**

Coffee Break

**11:15 - 12:30**

**Student Presentations**

**HEART AND VASCULAR REMODELLING**

**12:30 - 14:00**

Lunch

**14:00 - 14:45**

**MICHAEL BEERS** (University of Pittsburg, Rochester, USA)  
“Surfactant protein C biosynthesis in health and disease: insights into a role for epithelial cell dysfunction in fibrotic and obstructive lung disorders”

**14:45 - 16:00**

**Student Presentations**

**INFLAMMATION AND COPD**

**16:00 - 18:00**

**Group photograph**

**Meet-the-Professor sessions (coffee provided)**

**18:00 - 18:45**

**TOM MARIANI** (University of Rochester, Rochester, USA)  
“Developmental antecedents of chronic obstructive pulmonary disease”

**18:45 - 19:30**

Presentation of MBML coursework certificates

**19:30 - end**

Dinner and Social Program

**WEDNESDAY, 29.07.2009**

**07:30 - 09:00**

Breakfast

**09:00 – 09:45**

**MARC PETERS-GOLDEN** (University of Michigan, Ann Arbor, USA)

“Eicosanoid balance as a critical determinant of inflammation and innate immune function”

**09:45 - 10:45**

**Student Presentations**

**PULMONARY VASCULAR DISEASE II**

**10:45 - 11:15**

Coffee Break

**11:15 - 12:30**

**Student Presentations**

**HEART DEVELOPMENT**

**12:30 - 12:45**

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

**12:45 - 14:00**

Lunch

**14:00**

Bus Departure from Rauschholzhausen to Giessen

Meeting Point: Parking Lot of the Castle 14:00

## A) PULMONARY VASCULAR DISEASE I

**Monday, July 27, at 11:15**

**Chairs: Friederike Weisel and Kirsten Szelepusa**

11:15 - 11:30: [Oleg Pak](#) (PI: Norbert Weissmann)

“Hypoxia regulated subcellular ROS production”

11:30 - 11:45: [Djuro Kosanovic](#) (PI: Ralph T. Schermuly)

“The inhibition of Rho-kinase (ROCK) for the treatment of pulmonary hypertension”

11:45 - 12:00: [Christine Veith](#) (PI: Grażyna Kwapiszewska)

“The cytoskeletal protein paxillin - a focal adhesion protein involved in the pathogenesis of pulmonary hypertension?”

12:00 - 12:15: [Alexandra Tretyn](#) (PI: Ralph T. Schermuly)

“Wnt signaling in the right heart hypertrophy”

11:15 - 11:30: [Florian Veit](#) (PI: Norbert Weissmann)

“Increased generation of reactive oxygen species in PASMCM from monocrotaline-treated rats”

## B) ACUTE LUNG INJURY: ALVEOLAR ION AND FLUID TRANSPORT

**Monday, July 27, at 14:45**

**Chairs: Florian Veit and Zbigniew Mikulski**

14:45 - 15:00: [Mike Althaus](#) (PI: Rory E. Morty)

“Carbon monoxide as a therapeutic option in ALI? The impact of carbon monoxide on alveolar fluid clearance and epithelial sodium channels”

15:00 - 15:15: [Benno Grzesik](#) (PI: István Vadász)

“The impact of hypercapnia on alveolar epithelial sodium transport”

15:15 - 15:30: [Monika Hollenhorst](#) (PI: Martin Fronius and Wolfgang Clauss)

“Nicotine activates chloride channels in the mouse tracheal epithelium”

15:30 - 15:45: [Yasmin Buchäcker](#) (PI: István Vadász)

“Effects of alveolar recruitment manoeuvres on epithelial barrier integrity in rabbit lungs”

15:45 - 16:00: [Łukasz Wujak](#) (PI: Rory E. Morty)

“Regulation of the Na,K-ATPase by transforming growth factor- $\beta$ ”

16:00 - 16:15: [Christine Vohwinkel](#) (PI: Iasha Sznajder)

*IRTG1062 Partner Laboratory – Northwestern University, Chicago*

“Hypercapnia leads to mitochondrial dysfunction and decreased cell proliferation”

## C) LUNG FIBROSIS

**Monday, July 27, at 16:30**

**Chairs: Łukasz Wujak and Wiebke Bielenberg**

16:45 - 17:00: [Benjamin Löh](#) (PI: Andreas Günther)

“Increased susceptibility to bacterial infection in experimental pulmonary fibrosis”

17:00 - 17:15: [Ewa Jabłonska](#) (PI: Małgorzata Wygrecka and Klauss Preissner)

“The role of Factor XII in the pathogenesis of idiopathic lung fibrosis”

17:15 - 17:30: [Katarzyna Piskulak](#) (PI: Andreas Günther)

“Regulation and role of the notch signalling pathway in progenitor cell differentiation and proliferation in the normal and fibrotic lung”

17:30 - 17:45: [Martin Hühn](#) (PI: Andreas Günther)

“Over-expression of ER-stress signalling molecules in the murine alveolar epithelium”

## D) ACUTE LUNG INJURY: INFLAMMATION AND RELATED ISSUES

**Tuesday, July 28, at 09:45**

**Chairs: Heike Schlenz and Mike Althaus**

09:45 - 10:00: [Katrín Högner](#) (PI: Susanne Herold and Jürgen Lohmeyer)

“Mechanisms of epithelial cell apoptosis during influenza virus pneumonia”

10:00 - 10:15: [Paweł Turowski](#) (PI: Rory E. Morty)

“Molecular mechanisms of ventilator-induced acute kidney injury”

10:15 - 10:30: [Mona Saffarzadeh](#) (PI: Klaus Preissner)

“The role of the neutrophil extracellular trap (NET) in acute lung injury”

10:30 - 10:45: [Zbigniew Zaslona](#) (PI: Jürgen Lohmeyer)

“Can biology of lung dendritic cells be a model for studying extracellular role of granzymes?”

## E) HEART AND VASCULAR REMODELLING

**Tuesday, July 28, at 11:15**

**Chairs: Pavan Pamarthi and Đjuro Kosanovic**

11:15 - 11:30: [Kirsten Szelepusa](#) (PI: Robert Voswinkel)

“Circulating fibrocytes in the pathogenesis and therapy of pulmonary hypertension - role of kinase receptors”

11:30 - 11:45: [Wiebke Bielenberg](#) (PI: Daniel Sedding)

“miRNA-dependent regulation of smooth muscle cell function during neointima formation”

11:45 - 12:00: [Yves Schymura](#) (PI: Ralph T. Schermuly)

“The role of NO-sGC-cGMP in right ventricular hypertrophy”

12:00 - 12:15: [Judith Daecher](#) (PI: Thomas Böttger)

“Physiological functions of miRNAs in the cardiovascular system”

12:15 - 12:30: [Carine Detzer](#) (PI: Benno Jungblut)

“Lipid signalling in zebrafish: research to the role of S1P during cardiovascular development”

## F) INFLAMMATION AND COPD

**Tuesday, July 28, at 14:45**

**Chairs: Monika Hollenhorst and Pawel Turowski**

14:45 - 15:00: [Zbigniew Mikulski](#) (PI: Wolfgang Kummer)

“Serotonin acutely elevates intracellular calcium concentration and augments CCL2 production in murine alveolar macrophages”

15:00 - 15:15: [Michael Seimetz](#) (PI: Norbert Weissmann)

“NADPH oxidases are regulated in tobacco smoke induced COPD – a key role of NOXA1 and NOXO1?”

15:15 - 15:30: [Heike Schlenz](#) (PI: Wolfgang Kummer)

“Muscarinic receptor-mediated constriction of murine bronchi is caveolae-dependent”

15:30 - 15:45: [Nikolaus Kneidinger](#) (PI: Oliver Eickelberg)

“Expression and activity of Wnt/ $\beta$ -catenin signalling in COPD”

15:45 - 16:00: [Andreas Hecker](#) (PI: Veronika Grau)

“Acetylcholine synthesis is up-regulated in leukocytes from rat renal allografts - a potential pharmacological target to treat acute organ rejection of the lung?”

## **G) PULMONARY VASCULAR DISEASE II**

**Wednesday, July 30, at 09:45**

**Chairs: Christine Veith and Oleg Pak**

09:45 - 10:00: [Swati Dabral](#) (PI: Ralph T. Schermuly)

“The role of notch Signaling in Pulmonary hypertension”

10:0 - 10:15: [Friederike Weisel](#) (PI: Norberth Weissmann)

“AMD-1: a new candidate in vascular reverse remodelling”

10:15 - 10:30: [Himal Luitel](#) (PI: Ralph T. Schermuly and Ardeschir Ghofrani)

“The role of bone-marrow-derived cells in pressure overload-induced right ventricular hypertrophy”

10:30 - 10:45: [Pavan Kumar Pamarthi](#) (PI: Ralph T. Schermuly)

“Prostanoid signalling in cardiopulmonary disease”

## **H) HEART DEVELOPMENT**

**Wednesday, July 29, at 11:15**

**Chairs: Alexandra Tretyn and Yasmin Buchäckert**

11:15 - 11:30: [Hagen Witzel](#) (PI: Gergana Dobreva)

“The LIM-domain transcription factor Isl-1 shuttles between the cytoplasm and the nucleus during heart development”

11:30 - 11:45: [Luca Caputo](#) (PI: Gergana Dobreva)

“Isl1-dependent transcriptional networks in cardiac development”

11:45 - 12:00: [Katharina Jennisches](#) (PI: Thomas Braun)

“Validation and functional characterisation of heart- and muscle-enriched gene”

12:00 - 12:15: [Anne Konzer](#) (PI: Thomas Braun)

“Quantitative analysis of the mouse cardiomyocyte proteome by state of the art mass spectrometry”

12:15 - 12:30: [Maria Raissi Dekhorti](#) (PI: Thomas Kubin and Jochen Pöling)

“Comparison of the functional and regulatory mechanisms in the cell cycle of cardiomyocytes and smooth muscle cells”

## Speaker Introductions

**Professor Steven Abman** by Florain Veit

**Professor Michael Beers** by Benjamin Löh

**Professor Dean Sheppard** by Katrin Högner

**Professor Tom Mariani** by Katarzyna Piskulak

**Professor Sir Timothy Richard Hunt** by Benno Grzesik

**Professor Stephen Holgate** by Nikolaus Kneidinger

**Professor Marc Peters-Golden** by Zbigniew Zaslona

## Meet-the-Professor sessions

### **Steven Abman**

Alexandra Tretyn  
Christine Veith  
Wiebke Bielenberg  
Florian Veit  
Đjuro Kosanović  
Oleg Pak  
Anne Konzer

### **Dean Sheppard**

Mike Althaus  
Katarzyna Piskulak  
Yasmin Buchäckert  
Mona Saffarzadeh  
Swati Dabral  
Yves Schymura  
Christine Vohwinkel

### **Marc Peters-Golden**

Zbigniew Zaslona  
Zbigniew Mikulski  
Katrin Högner  
Kirsten Szelepusa  
Łukasz Wujak  
Paweł Turowski

### **Michael Beers**

Benjamin Löh  
Martin Hühn  
Monika Hollenhorst  
Andreas Hecker  
Michael Seimetz  
Katharina Jennisches  
Maria Raissi Dekhorti

### **Stephen Holgate**

Heike Schlenz  
Alexandra Pischl  
Benno Grzesik  
Nikolaus Kneidinger  
Hagen Witzel  
Luca Caputo

### **Tom Mariani**

Friedericke Weisel  
Pavan Kumar Pamarthi  
Himal Luitel  
Ewa Jabłonska  
Judith Daecher  
Carina Detzer

INVITED SPEAKERS: 2009 MBML ANNUAL RETREAT

**Steven H. Abman, MD**

Professor, Department of Pediatrics  
Director, Pediatric Heart Lung Center  
University of Colorado School of Medicine and The Children's Hospital,  
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**Michael F. Beers, MD**

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**Stephen Holgate, MD**

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**Tim Hunt, PhD**

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**Tom Mariani, PhD**

Associate Professor of Pediatrics, Medicine and Environmental Medicine  
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