

## The Neonatal Window of Opportunity, Early Priming for Life

December 5-7, 2016, Hannover, Germany  
Herrenhausen Conference

Environmental, nutritional and microbial exposure modulates important biological processes in our body including the maturation of our immune system. Recent epidemiological and experimental studies indicate that exogenous factors when encountered early in life can result in life-long imprinting of immune and other processes and thereby predispose for disease resistance or susceptibility. This phenomenon is known as "window of opportunity" to describe the restricted time frame during early development during which the influence can take place. These findings thus shed light on a new interrelationship between early postnatal development and long-term health and represent a possible paradigm shift in the understanding of the etiology of human diseases with major influence on future epidemiological studies and impact on the clinical management and care of neonates and young children.

To obtain more insight in the interaction between the environment and the host during this early time in life a cooperative effort between researchers of different disciplines and an extended view on epidemiological links between early exposure and disease development is needed overcoming the traditional view on the etiology of human diseases. The Herrenhausen Conference "The neonatal window of opportunity, early priming for life" aims at providing a first step in this direction in order to initiate interactions and cooperative initiatives and booster future research on factors that influence the priming period early in life and determine the susceptibility to disease in adult individuals.

We invite all researchers and experts working in this field. There is no fee for the attendance, but registration is essential. [www.volkswagenstiftung.de/windowofopportunity](http://www.volkswagenstiftung.de/windowofopportunity)

### PROGRAM (as of June 2016, all academic titles have been omitted)

#### Monday, December 5<sup>th</sup>, 2016

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- 12.00 p.m.      *Registration and Coffee and Light Lunch*
- 2.00 p.m.      Welcome addresses  
**Wilhelm Krull**, Secretary General, Volkswagen Foundation  
**Mathias Hornef**, RWTH Aachen University  
**Harald Renz**, Philipps-University of Marburg
- 2.30 p.m.      Session 1:  
**ORGAN DEVELOPMENT & ENVIRONMENTAL EXPOSURE OF THE NEONATE**  
Introduction and Chair: **Gijs van den Brink**, Academic Medical Center (AMC) Netherlands
- ESTABLISHMENT OF THE MICROBIOME IN EARLY INFANCY*  
**John Penders**, Maastricht University, Netherlands
- GENETIC MECHANISM OF ALVEOLOGENESIS: LESSONS FROM IN VIVO MODELS*  
**Xin Sun**, University of Wisconsin-Madison, USA
- 4.00 p.m.      Coffee Break

- 4.30 p.m. Session 2:  
**MATURATION OF THE IMMUNE SYSTEM**  
Introduction and Chair: **Immo Prinz**, Hannover Medical School, Germany
- THE IMPACT OF THE MICROBIOME ON RESPIRATORY DISEASES*  
**Benjamin Marsland**, University Hospital of Lausanne, Switzerland
- ENVIRONMENTAL SENSING BY INNATE LYMPHOID CELLS*  
**Henrique Veiga-Fernandes**, Faculdade de Medicina da Universidade de Lisboa, Portugal
- 6.00 p.m. **Lightning Talks 1**, 6 Presentations
- 6.30 p.m. *Aperitif and Poster Session*
- 7.00 p.m. *Welcome Dinner / Speaker Table*

## Tuesday, December 6<sup>th</sup>, 2016

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- 9.00 a.m. Session 3:  
**MECHANISMS OF ADAPTATION TO POSTNATAL LIFE**  
Introduction and Chair: **Agnes Wold**, University of Gothenburg, Sweden
- POSTNATAL MATERNAL-CHILD INTERACTION THROUGH BREAST MILK: A PHYSIOLOGICAL LINK WITH LONG TERM IMPACT ON IMMUNE FUNCTION*  
**Valérie Verhasselt**, University of Nice-Sophia Antipolis, France
- TISSUE COMPARTMENTALIZATION OF IMMUNE RESPONSES IN EARLY LIFE*  
**Donna Farber**, University of California, Santa Barbara, USA
- 10.30 a.m. *Coffee Break*
- 11.00 a.m. **Lightning Talks 2**, 8 Presentations
- 11.30 a.m. *Lunch*
- 1.00 p.m. Session 4:  
**FUNCTIONAL CONSEQUENCES OF NEONATAL EXPOSURE**  
Introduction and Chair: **Gesine Hansen**, Hannover Medical School, Germany
- NEONATAL REGULATION OF NKT CELLS*  
**Richard Blumberg**, Harvard University, USA
- MATERNAL AND EARLY LIFE MICROBIOTA AND EFFECTS ON THE NEONATAL IMMUNE SYSTEM*  
**Kathy McCoy**, University of Bern, Switzerland

2.30 p.m. **Lightning Talks 3**, 8 Presentations

3.00 p.m. *Coffee Break*

3.30 p.m. Session 5:  
**AGE-DEPENDENT SUSCEPTIBILITY TO INFECTION**  
Introduction and Chair: **Arnaud Marchant**, Université Libre de Bruxelles, Belgium

*ONTOGENY OF THE MUCOSAL HOST RESPONSE TO ENTERIC INFECTION*

**Mathias Hornef**, RWTH Aachen University, Germany

*WHAT CAN SYSTEMS BIOLOGY TELL US ABOUT NEONATAL SEPSIS?*

**Peter Ghazal**, The University of Edinburgh, Scotland

*IMMUNITY TO ENTERIC PATHOGENS IN EARLY LIFE*

**Betty Adkins**, University of Miami, USA

5.30 p.m. **Lightning Talks 4**, 8 Presentations

6.00 p.m. *Aperitif with Cultural Event and Dinner*

### Wednesday, December 7<sup>th</sup>, 2016

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9.00 a.m. Session 6:  
**AGE-DEPENDENT SUSCEPTIBILITY TO IMMUNE MEDIATED DISEASE**  
Introduction and Chair: **Mathias Hornef**, RWTH Aachen University, Germany

*IMMUNE DEVELOPMENT IN THE PATHOGENESIS AND TREATMENT OF NEONATAL NECROTIZING ENTEROCOLITIS*

**David Hackam**, Johns Hopkins Children's Center Baltimore, USA

*INFANT SUSCEPTIBILITY DRIVES THE PROBLEM OF THE PNEUMOCOCCUS*

**Jeffrey Weiser**, Perelman School of Medicine at the University of Pennsylvania, USA

*EARLY LIFE MICROBIAL EXPOSURE SHAPES THE PRIMARY IMMUNOGLOBULIN REPERTOIRE*

**Duane Wesemann**, Harvard University, Brigham and Women's Hospital, USA

11.00 a.m. *Coffee Break*

- 11.30 a.m.      Session 7:  
**ENVIRONMENTAL EXPOSURE & DISEASE SUSCEPTIBILITY**  
Introduction and Chair: **Johan Garssen**, University of Utrecht, Netherlands
- PROTECTIVE ENVIRONMENTS FOR THE DEVELOPMENT OF CHILDHOOD ASTHMA AND ALLERGIES*  
**Erika von Mutius**, Hospital of the Ludwig-Maximilians-University (LMU) of Munich, Germany
- ALLERGO-PROTECTION THROUGH MICROBIAL CONTACT*  
**Harald Renz**, Philipps-University of Marburg, Germany
- 1.00 p.m.      Poster Awards and Closing Remarks  
PERSPECTIVES OF FURTHER RESEARCH IN THE FIELD OF THE NEONATAL WINDOW OF OPPORTUNITY
- Wilhelm Krull**, Secretary General, Volkswagen Foundation  
**Oliver Grewe**, Volkswagen Foundation  
**Mathias Hornef**, RWTH Aachen University, Germany  
**Harald Renz**, Philipps-University of Marburg, Germany
- 1.30 p.m.      *Lunch*
- 3.00 p.m.      End of Conference