**Lung Science Conference**  
*Development of chronic lung diseases: from life-spanning mechanisms to preventive therapy*  

14-17 March 2024  
Estoril, Portugal

The conference is granted with **16 CME credits** by the European Board for Accreditation on Pneumology (EBAP)

### Thursday 14 March 2024

**Opening session**  
Chair: TBC

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<th>Time</th>
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| 18:00-18:15| Welcome and Introduction  
Silke Meiners, ERS Conferences and Seminars Director |
| 18:15-19:00| Opening Lecture  
What do we know about the development of chronic lung diseases across the life span?  
Alvar Agusti (Spain) |
| 19:00-19:15| Discussion |

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>19:30-21:00</td>
<td>Poster session 1 and networking</td>
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### Group A

**PS101 - Unravelling susceptibility to COPD: insights from a novel in vitro model to potential therapeutic targets** – Cheng-Yu Wu (Germany)

**PS106 - A single-cell atlas of the airway wall in patients with asthma reveals novel cellular mechanisms of disease.** – Martijn C. Nawijn (Netherlands)

**PS111 - IL-13 results in short term epithelial dedifferentiation and long term goblet cell expansion in PBECs from patients with asthma** – Jelmer Vlasma (Netherlands)

**PS116 - Distinguishing B cell maturation subsets in lymph node aspirates and peripheral blood in patients with lung cancer and sarcoidosis** – Iwona Kwiecień (Poland)

**PS121 - Inflammatory imbalance in tracheal aspirate of very preterm newborns is associated with lung function deficiencies at school-age** – Ellen Tufvesson (Sweden)

**PS126 - Developmental origin of sex differences in lung-resident immunity upon prenatal adversities** – Ioannis Belios (Germany)

### Group B

**PS102 - HMGN5, a chromatin remodeling protein drives COPD susceptibility** – Aicha Jeridi (Germany)

**PS107 - microRNA-Based Approaches Targeting Alveolar Epithelial Cells as Pro-Regenerative Treatment in Idiopathic Pulmonary Fibrosis** – Maria Concetta Volpe (Italy)

**PS112 - Exosomal Signaling and Mitochondrial Transfer Reprograms T Helper Cell Function in Human Asthma** – Jessy Deshane (United States)

**PS117 - Exploring micro(nano)plastic presence and effects in human airways: in vitro and clinical findings** – Agne Vailionyte (Lithuania)

All timings are in Western European Time (WET)
PS122 - Pro-fibrotic macrophages escape redox associated cell death by upregulation of anti-ferroptotic metabolic pathways – Julia Sauer (Germany)

PS127 - Air pollution and blood inflammatory phenotypes of asthma – Marine Savouré (France)

Group C

PS103 - Primary ciliary dyskinesia patient-specific model to study and treat ciliary dysfunction. – Bahar Yetkin-Arik (Netherlands)

PS108 - Epigenetic age acceleration and severity of airflow limitation on blood and lung tissue of COPD – Julieta Viglino (Spain)

PS113 - Cruise ship-associated ultrafine PM is rich in vanadium, which promotes hyper inflammatory responses, but suppresses antiviral immunity – Matthew Loxham (United Kingdom)

PS118 - Dissecting the role of microRNAs and cellular aging in the pathophysiology of Idiopathic Pulmonary Fibrosis – Giulia Zandonenengo (Italy)

PS123 - Airway cell lumican impacts extracellular matrix organisation and fibroblast function in early life allergic airways disease – Franz Puttur (United Kingdom)

PS128 - IGF2BP3 modulates type 2 immunity in severe asthma: A novel regulator of IL-4/IL-13 signalling – Paniz Khooshemehri (United Kingdom)

Group D

PS104 - The lung microvasculature promotes alveolar type 2 cell differentiation via secreted SPARCL1 – Paolo Panza (Germany)

PS109 - Cigarette smoke acts via c-Src to decrease CXCL11 levels and deter lung Treg responses in HIV-related COPD – Robert Foronjy (United States)

PS114 - Preconception paternal and maternal smoking alters gene expression in the early murine embryo and offspring lung function – Susanne Krauss-Etschmann (Germany)

PS119 - Deciphering the paradoxical immunoregulatory roles of ADAM metallopeptidase with thrombospondin type 1 motif-4 (ADAMTS4) in lung inflammation – Mohamed Ghonim (United States)

PS124 - Automatic cell type harmonization and integration across human lung disease data sets – Kerstin Meyer (United Kingdom)

PS129 - The Role of IFNL2 in wheeze and asthma control across age – Nicole Maison (Germany)

Group E

PS105 - Early life exposure to cigarette smoke primes lung response to later life exposure in a mouse model – Meaghan Jones (Canada)

PS110 - Arrested Development: spatial exploration of divergent paths of alveolar regeneration in the bleomycin mouse model versus human lung fibrosis – Martina Olsson Lindvall (Sweden)

PS115 - Development of multi-cell-type, immune competent lung organoids and microtissues for developmental and disease modelling applications – Nicholas Hannan (United Kingdom)

PS120 - Physical activity and body mass related to zFEV1 catch-up lung function growth in childhood: a population-based accelerated cohort study – Maria Llopis Cidad (Spain)

PS125 - Brake wear particles induce pseudohypoxic HIF pathway activation in a copper-dependent manner in alveolar epithelial cells – James Parkin (United Kingdom)

PS130 - Farm dust primes macrophages to protect against allergic asthma – Markus Klotz (Germany)

All timings are in Western European Time (WET)
**Friday 15 March 2024**

### Keynote lecture

Chair: Gerard H.Koppelman

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| 08:30-08:50 | **Keynote lecture**
  Genetic determinants of chronic lung diseases  
  Michael Cho (United States) |
| 08:50-09:05 | Discussion |

### Session 1: Life-spanning lung environmental interactions in chronic lung diseases

Chair: Gerard H.Koppelman

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<th>Time</th>
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| 09:05-09:25 | **How air pollution and climate change affect allergic rhinitis and asthma?**  
  Barbara Hoffmann (Germany) |
| 09:25-09:40 | Discussion |
| 09:40-09:55 | **OP01 - Maternal diet mitigates the effects of prenatal air pollution exposure on DNA methylation of immune-relevant genes in cord blood**  
  Meaghan Jones (Canada) |
| 09:55-10:15 | **COPD, biomarkers and lung function trajectories**  
  Rosa Faner (Spain) |
| 10:15-10:30 | Discussion |
| 10:30-10:45 | **OP02 - Epigenetic deregulation in AT2 cells impairs alveolar regeneration in COPD**  
  Renata Jurkowska (United Kingdom) |
| 10:45-11:00 | Coffee break |

### Session 2: Aging pathways involved in chronic lung diseases (part 1)

Chair: Mareike Lehmann

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<th>Time</th>
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| 11:00-11:20 | **Aging and metabolic pathways in lung fibrosis**  
  Ana Mora (United States) |
| 11:20-11:35 | Discussion |
| 11:35-11:50 | **OP03 - Aging Alters Alveolar Niche Crosstalk and Impairs Alveolar Type II Cell Progenitor Function in a Murine Model of Pulmonary Fibrosis**  
  Luis Rodriguez (United Kingdom) |
| 11:50-12:10 | **The many faces of senescence**  
  Toren Finkel (United States) |
| 12:10-12:25 | Discussion |
| 12:30-14:30 | **Lunch for all delegates and mentorship lunch discussion for bursary recipients and their mentors** |

All timings are in Western European Time (WET)
Session 2: Aging pathways involved in chronic lung diseases (part 2)
Chair: Mauricio Rojas

14:30-14:50 DNA-methylation: Marker of lung disease, environment, and age
Gerard H. Koppelman (Netherlands)
14:50-15:05 Discussion
15:05-15:20 OP04 - Novel SASP factor mediates fibroblast reprogramming in aging-associated pulmonary fibrosis
Maria Camila Melo Narvaez (Germany)
15:20-15:40 Coffee break

Session 3: Developmental pathways and the microbiome in chronic lung diseases
Chair: TBC

15:40-16:00 Developmental pathways in chronic lung diseases
Rory Morty (Germany)
16:00-16:15 Discussion
16:15-16:30 OP05 - Delayed airway epithelial repair is correlated with airway obstruction in young adults born very preterm.
Denby Evans (Australia)
16:30-16:50 The microbiota in respiratory tract infections: from association to intervention
Alison Morris (United States)
16:50-17:05 Discussion
17:15-18:45 Poster Session 2

Group A
PS201 - Pulmonary extracellular vesicles drive alveolar macrophage dysfunction in Acute Respiratory Distress Syndrome – Katie Spencer (United Kingdom)
PS206 - Modelling Approaches for Inferring Lung Function Trajectories across Diverse Data Characteristics: A Technical Proof-of-Concept for CADSET – Núria Olvera Ocaña (Spain)
PS211 - Acute lung injury model in human Precision Cut Lung Slices. – Namrata Kewalramani (Switzerland)
PS216 - Programming of respiratory epithelium in utero – Thomas Iosifidis (Australia)
PS221 - Clinical implications of poor airway epithelial cell repair – Thomas Iosifidis (Australia)
PS226 - Cellular Senescence Affects ECM Regulation in COPD Lung Tissue – Roy R. Woldhuis (Netherlands)

Group B
PS202 - Mucin overexpression in (pre-)COPD lung tissue correlates with degree of emphysema – Hanne Voet (Belgium)
PS207 - Identification of senescent-like cells in airway organoids using single cell sequencing – Michelle Brand (Germany)

All timings are in Western European Time (WET)
PS212 - Crystal-mediated inflammation in alveolar macrophages of a mouse model of lung fibrosis – Sonia Giambelluca (Germany)

PS217 - How can gene editing of human pluripotent stem cells help understand the effect of genetics on respiratory diseases? – Sara Cuevas Ocaña (United Kingdom)

PS222 - Targeting host cell metabolism to treat virus-induced exacerbations of COPD – Sarah Wideman (Austria)

PS227 - Short-chain fatty acids, as key metabolites of gut microbiota, improve inflamm-aging and lung injury in old mice – Christina Brandenberger (Germany)

Group C

PS203 - Decoding the genetic predisposition to asthma using epigenomics – L Trap (Netherlands)

PS208 - Combinatorial AAV6.2FF-SP-C-miRNA gene therapy to prevent/reverse fibrosis? – Pauline BARDIN (Canada)

PS213 - Alveolus lung-chip for studying alveolar niche and lung repair – Wioletta Skronska-Wasek (Germany)

PS218 - Heterogeneous ILC responses in severe asthma patients undergoing anti-IL5/5R therapy – Kyle Mincham (United Kingdom)

PS223 - The lung-bone marrow axis: myelosuppressive effects of e-cigarette aerosol exposures in mice – Matthew McGraw (United States)

PS228 - YAP1-A key mediator in enolase-1 driven pulmonary fibrosis – shailza sharma (United States)

Group D

PS204 - Lung resident mesenchymal stem cells in idiopathic pulmonary fibrosis – Gabriel Escarrer Garau (Spain)

PS209 - Targeting mucus hyperproduction in COPD using a novel siRNA therapy to silence SPDEF - Thais Priscilla Pivetta (France)

PS214 - Plasma profiling of extremely preterm infants identifies the proteins and processes that shape BPD initiation in the first days of life – Prue Pereira-Fantini (Australia)

PS219 - Engineering dynamically tunable 3D co-culture models of human pulmonary fibrosis – Alicia Tanneberger (United States)

PS224 - Deciphering the human deep lung microbiota from its microbial ecology to its potential for modulating host immunity. – Sudip Das (Switzerland)

PS229 - CCL28 as a modulator of human acute respiratory distress syndrome – Andre Gomes (Portugal)

Group E

PS205 - Longitudinal pulmonary function in severe paediatric asthma and factors influencing decline – Ali Hakizimana (United Kingdom)

PS210 - Advancing lung science with primary adult alveolar organoids: Regeneration, disease modeling, and the inflammatory niche – Antonella Dost (Netherlands)

PS215 - Local autoimmunity development in a silicosis-RA mouse model – Lisa M F Janssen (Belgium)

PS220 - MAIT cells protect against lung injury – Xiawei Zhang (United Kingdom)

PS225 - Ventilation-induced airspace acidification via NHE1 increased susceptibility to Pseudomonas aeruginosa pneumonia – Matthias Felten (Germany)

All timings are in Western European Time (WET)
PS230 - Spatially resolved transcriptomics of mouse lung for investigative safety of inhaled antisense oligonucleotides – Linnea Johansson (Sweden)

Saturday 16 March 2024

Session 4: How can we achieve early detection of chronic lung disease? (part 1)
Chair: Rosa Faner

08:45-09:05 Epidemiological prediction of the incidence of chronic lung diseases
Shyamali Dharmage (Australia)
09:05-09:20 Discussion
09:20-09:35 OP06 - Fetal lung growth as a tool to predict the risk for respiratory infections and asthma early in life
Dimitra Zazara (Germany)
09:35-09:55 Early image-based detection of chronic lung diseases
Stijn Verleden (Belgium)
09:55-10:10 Discussion
10:10-10:25 OP07 - Deciphering the spatial heterogeneity of interstitial lung disease by integrative radiomics and single-nucleus transcriptomics
Michael Ammeter (Switzerland)

10:25-10:55 Group Picture and Coffee Break

Session 4: How can we achieve early detection of chronic lung disease? (part 2)
Chair: David Drummond

10:55-11:15 Digital twins to personalize medicine
Liesbet Geris (Belgium)
11:15-11:30 Discussion
11:30-11:45 OP08 - Advancements in early airway disease detection using vowel phonation with smartphone
Dat Ngo (United Kingdom)

11:45-13:15 Lunch

Young Investigator Session – The William MacNee Award
Chair: Ana Mora

13:15-13:30 YI01 - Multiplex protein quantification per cell type in bronchoalveolar lavage cytospin cells of patients with asthma and healthy individuals
Nicole van der Burg (Sweden)
13:30-13:45 YI02 - Developmental fibroblast growth factor 10 in pathogenesis and reversion of emphysema and PH in COPD
Stefan Hadzic (Germany)
13:45-14:00 YI03 - Modeling trajectories of severe early-onset COPD using human induced pluripotent stem cells (iPSC).

All timings are in Western European Time (WET)
14:00-14:15  YI04 - Multi-omic immune signatures of early life cystic fibrosis lung disease and their modification by CFTR modulators  
Melanie Neeland (Australia)

14:15-14:30  YI05 - Investigation into the lung vasculature transcriptional signature during asthma using spatial transcriptomic  
Regis Joulia (United Kingdom)

14:45-16:15  Poster Session 3

**Group A**

PS301 - Sulfatase modifying factor-1 common polymorphisms are associated with response to inhaled corticosteroids in COPD – Charikleia Ntenti (Germany)

PS306 - Substrates of ADAM17 sheddase in airway and blood samples of patients with asthma and healthy individuals – Carin Larsson (Sweden)

PS311 - Investigating the role of sex hormones in pulmonary fibrosis using alveolar epithelial type 2 cells generated from pluripotent stem cells – Anja Schweikert (Ireland)

PS316 - Body mass index trajectories from birth to early adulthood and lung function development – Gang Wang (Sweden)

PS321 - Multipotent adult progenitor cells protect the preterm lung against perinatal inflammatory stress – Sophie Neuen (Netherlands)

PS326 - Treatment of ILD with local administration of different imatinib formulations: analysis of toxicity on lung cells and PCLS model – Sara Bozzini (Italy)

**Group B**

PS302 - Oxygen Therapy as a Driver of Endothelial-to-Mesenchymal Transition via p53-Signaling in Lung Fibrosis – Aakruti Nayak (Germany)

PS307 - Benefits of bronchial epithelial repair by iPSCs in COPD – Marion Nadaud (France)

PS312 - Using Nkx2.5 to interfere with profibrotic mechanotransduction signaling to prevent further fibrotic progression in IPF – Alexander Noble (Canada)

PS317 - Lung effects of acute oral administration of bisphenol A-loaded low-density polyethylene microplastics – Gabriel Escarrer Garau (Spain)

PS322 - Increased circulating PD-1+CD4+ memory T cell and PD-1+ regulatory T cell proportions associate with prednisone efficacy in sarcoidosis – Lieke de Jong (Netherlands)

PS327 - Exploring the role of circular RNAs in alveolar epithelial damage in pulmonary fibrosis – Kanwal Irshad (Ireland)

**Group C**

PS303 - Sigma-1 receptor agonist mitigates bleomycin-induced pulmonary fibrosis in mice – Adam Hosszu (Hungary)

PS308 - Impact of hypoxia on the host-pathogen interactions in the human lung – Lee Page (United Kingdom)

All timings are in Western European Time (WET)
PS313 - Role of breathing and respiratory support in initiating preterm lung injury at birth – Prue Pereira-Fantini (Australia)

PS318 - Influence of recurrent viral respiratory tract infections on lung function trajectories – Abdulkadir Kalender (Germany)

PS323 - The p70-S6K inhibitor LY2584702 reverses oxidative stress-induced senescence in small airway epithelial cells. – Faye Shrosbery (United Kingdom)

PS328 - Comparison of plasma-derived extracellular vesicles from Sarcoidosis patients and healthy individuals to find biomarkers for disease – Susanne Gabrielsson (Sweden)

Group D

PS304 - Low CD4 and high CD8 percentages prior to lung transplantation are linked to significantly decreased survival in the first post-transplant year – Miray Guney (Czech Republic)

PS309 - Anti-fibrotic effect of a FGF ligands trap in pulmonary fibrosis – Célia Scribe (France)

PS314 - MTF1 plays a key role in protection against vanadium-induced stress in alveolar epithelial cells – Lareb S.N. Dean (United Kingdom)

PS319 - The YAP profile of lung mesenchymal cells differs when subjected to cyclic stretch in a 2D and 3D environment – Anna Cederberg (Sweden)

PS324 - E-cigarette exposure reduces spontaneous NETosis in healthy older adults and COPD patients. – Robyn Halston (United Kingdom)

PS329 - MiR-223 and miR-328a influence allergic inflammation in rat PCLS – Joanna Nowakowska (Poland)

Group E

PS305 - Alternative Polyadenylation and beta-adrenergic therapy in Group 3 Pulmonary Hypertension – Harry Karmouty-Quintana (United States)

PS310 - Biomarkers of gut permeability are elevated in difficult to control asthma patients – Neil Williams (United Kingdom)

PS315 - Sex differences in lung-resident immunity are modulated by androgen-dependent pathways – Ioannis Belios (Germany)

PS320 - Maternal Cigarette Smoke Exposure in mice induces a Th2-biased immune response in Offspring – Ali Dehghan (Netherlands)

PS325 - HHIP polymorphisms involved in emphysema and early onset COPD - Mohamed Zakaria LAHMAR (France)

PS330 - Transcriptomic analysis of the TGF-β1-induced extracellular matrix reveals a critical role for the mTORC1/TEAD4 axis during fibrogenesis - Jo-Anne Wilson (United Kingdom)

From 15:00 coffee will be served in the poster area

Early-Career delegates session: The power of collaboration
Chairs: TBC

17:00-17:05 Introduction
Sara Cuevas Ocana (United Kingdom)

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<tr>
<td>17:05-17:15</td>
<td>Academic collaboration with worldwide leaders</td>
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<tr>
<td></td>
<td>Melanie Koenigshoff (United States)</td>
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<td>17:15-17:20</td>
<td>Discussion</td>
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<td>17:20-17:30</td>
<td>Collaboration with industrial partners</td>
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<td>Maria Belvisi (Sweden)</td>
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<td>17:30-17:35</td>
<td>Discussion</td>
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<td>17:35-17:45</td>
<td>Early career collaboration with respiratory peers</td>
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<td>Mareike Lehmann (Germany)</td>
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<td>17:45-17:50</td>
<td>Discussion</td>
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<td>17:50-18:00</td>
<td>When/where/how to get started in the collaboration cycle?</td>
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<td>Harry Karmouty-Quintana (United States)</td>
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<td>18:00-18:05</td>
<td>Discussion</td>
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<td>18:05-18:15</td>
<td>Remarks: where successful collaborations are a must and how ERS can help you accessing these opportunities</td>
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<td>Sara Cuevas Ocaña (United Kingdom)</td>
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<td>18:15-19:30</td>
<td>Round table</td>
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**Evening Pre-dinner talk**
Chair: Rory Morty

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<tr>
<td>19:30-19:50</td>
<td>Birth cohort for low- and middle-income settings</td>
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<td>Heather Zar (South Africa)</td>
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<td>19:50-20:05</td>
<td>Discussion</td>
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<td>20:05</td>
<td>Award Ceremony</td>
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*From 20:30 Dinner for all delegates*

**Sunday 17 March 2024**

**Session 5: Preventive and regenerative strategies for chronic lung diseases?**
*Chairs: Monika Gappa*

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<tr>
<td>08:45-09:05</td>
<td>Lung growth trajectories: catch up and growth failure</td>
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<td>Erik Mélen (Sweden)</td>
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<td>09:05-09:20</td>
<td>Discussion</td>
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<tr>
<td>09:20-09:40</td>
<td>Novel regenerative approaches to lung injury</td>
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<td>Thomas Conlon (Germany)</td>
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<td>09:40-09:55</td>
<td>Discussion</td>
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<td>09:55-10:15</td>
<td>Coffee break</td>
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<td>10:15-11:45</td>
<td>Panel Discussion</td>
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<td>Trajectories to early diagnosis and future therapies of chronic lung diseases</td>
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<td><strong>Moderator:</strong> Alvar Agusti (Spain)</td>
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<td><strong>Panelists:</strong> Monika Gappa and – TBD</td>
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11:45-12:00 Conclusion
Silke Meiners, ERS Conferences and Seminars Director

12:00 Lunch and departure