**Thursday 05 March 2020**

**Opening Session**
Chair: Reinoud Gosens

18:00-18:15  **Welcome and Introduction**  
Reinoud Gosens, ERS Conferences and Seminars Director

18:15-18:45  **Opening Lecture**  
“Metabolic reprogramming in innate immunity and inflammation” – Luke O’Neill (Dublin, Ireland)

18:45-19:00  Discussion

19:00-19:30  Welcome “cheese and wine” cocktail

**Friday 06 March 2020**

**Session 1: Immunometabolism and inflammaeing**
Chairs: Sam Janes and Niki Ubags

08:45-09:05  **Metabolic profiling of severe asthma: implications for phenotyping and treatment**  
Craig Wheelock (Stockholm, Sweden)

09:05-09:20  Discussion

09:20-09:35  **OP01 – Long non-coding RNA ADPGK-AS1 controls anti-tumor immunity in macrophages through metabolic modulation**  
Annika Karger (Bad Nauheim, Germany)

09:35-09:55  **Metabolic reprogramming of tumor associated macrophages and its impact on lung cancer progression**  
Rajkumar Savai (Bad Nauheim, Germany)

09:55-10:10  Discussion

10:10-10:25  **OP02 – Single Cell RNA-seq Reveals Zinc Metabolism Defect of Alveolar Type II Cells with Aging in IPF**  
Carol Liang (Los Angeles, USA)

10:25-10:50  Coffee break
**Session 2: Mitochondrial dysfunction in lung ageing and disease**  
**Chairs: Niki Reynaert and Alen Faiz**

<table>
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<tr>
<th>Time</th>
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Matt Whiteman (Exeter, United Kingdom) |
| 11:05-11:25   | Mitochondrial in airway smooth muscle as a driver of airway hyperresponsiveness in asthma  
Thomas Trian (Bordeaux, France) |
| 11:25-11:40   | Discussion                                                                                       |
| 11:40-11:55   | OP04 – Mitochondrial metabolism regulates cellular proteostasis  
Thomas Meul (Munich, Germany) |
| 11:55-14:00   | Lunch for all delegates and mentorship lunch for bursary recipients and their mentors          |
| 14:00-14:20   | Mitochondrial iron in the susceptibility, pathogenesis and progression of COPD  
Suzanne Cloonan (Dublin, Ireland) |
| 14:20-14:35   | Discussion                                                                                       |
| 14:35-14:50   | OP05 – Cigarette smoke exposure disrupts the molecular regulation of mitochondrial metabolism in human bronchial and alveolar epithelial cells  
Christy B.M. Tulen (Maastricht, Netherlands) |
| 14:50-15:10   | Senotherapies for chronic lung disease  
Peter Barnes (London, United Kingdom) |
| 15:10-15:25   | Discussion                                                                                       |
| 15:25-15:40   | OP06 – Air space distension precedes spontaneous fibrotic remodeling and impaired cholesterol metabolism in the absence of surfactant protein C  
Elena Lopez Rodriguez (Berlin, Germany) |
| 15:40-16:00   | Coffee break                                                                                     |
| 16:00-18:00   | **Poster Session 1**                                                                            |

**Group A - Chairs: Silke Meiners and Marco Buscetta**

**PP101** – Extracellular vesicles produced by bronchial epithelial cells in response to oxidative stress contain micro-RNAs associated with senescence  
Justine Devulder, United Kingdom

**PP103** – Association of extracellular Hsp70 with the severity of chronic obstructive pulmonary disease  
Iva Hlapčić, Croatia

**PP104** – Histologic hallmarks of smoking in the Gauting lung adenocarcinoma donors cohort  
Anne-Sophie Lamort, Germany

**PP105** – Diesel Exhaust Particles-induced Dysfunctional Responses in Lung Epithelial Progenitors is mediated by oxidative stress  
Xinhui Wu, Netherlands
PP106 – Comprehensive characterization of the immune landscape within different molecular subtypes of small cell lung cancer (SCLC) - Angel Nuñez Buiza, Spain

PP107 – COPD-derived fibroblasts secrete higher levels of senescence associated secretory phenotype (SASP) proteins - Roy R. Woldhuis, Australia

PP108 – Regulation of lung autophagy by proteinase-activated receptor 2 activation - Kirsty McCallum, United Kingdom

PP109 – Biomarkers of inflammation and auto-Abs in asthma with obesity - Anna Konishecheva, Russian Fed.

PP110 – Empyema Thoracis: A Comparative analysis of Tuberculous and Non Tuberculous etiology and their Outcomes - Prapulla Chandra Davuluri, India

Group B - Chairs: Ahn Tuan Dinh-Xuan and Anna Freeman

PP111 – Transfer of mitochondria between COPD airway smooth muscle cells - Julia Frankenberger Garcia, United Kingdom

PP112 – Rewiring polyunsaturated fatty acid metabolism renders the anti-tumor phenotype to tumor-associated macrophages in lung cancer - Siavash Mansouri, Germany

PP113 – Evaluation of lung miRNA expression and selected metabolic parameters in rat model of asthma - Wojciech Langwiński, Poland

PP114 – IGF1R deficiency attenuates acute lung injury by regulating epigenetics, cell senescence and mitochondrial homeostasis - Alfredo Urtubia, Spain

PP115 – Altered metabolic activity and redox balance are associated with a proliferative phenotype in COPD airway smooth muscle cells - Charalambos Michaeloudes, United Kingdom

PP116 – MicroRNA profiling in bronchial biopsies of asthma patients - Mirjam P. Roffel, Belgium

PP117 – Vitamin E metabolites prevent allergen sensitization in the mouse - Ida Cerqua, Italy

PP118 – Could the overweight influence bronchiectasis (B) exacerbations frequency (EF)? - Kseniya Suska, Ukraine

PP119 – The role of ZFP36L1 and ZFP36L2 in genome-wide post-transcriptional dysregulation of glucocorticoid non-responsive asthma - Jennifer Rynne, United Kingdom

Group C - Chairs: Ayşe Arzu Yorgancioğlu and Itsas García Arcos

PP120 – Clinical potential of sputum hyaluronan measurement in the diagnosis and prognosis of patients with NSCLC - Vanessa De Sa, Brazil

PP121 – Identification of single senescent cells from precision cut lung slices ex vivo - Qianjiang Hu, Germany

PP122 – Asthmatic eosinophils promote migration of ASM and MRC-5 cells via increased expression of ECM proteins and contractility - Ieva Janulaityte, Lithuania

PP123 – Immunotherapy response prediction in non-small cell lung cancer based on molecular and immune features - Javier Ramos Paradas, Spain

PP124 – Transfer of mitochondria from mesenchymal stromal cells through extracellular vesicles improves alveolar epithelial-capillary barrier in ARDS - Johnatas Silva, United Kingdom
PP125 – 3D mapping of blood vessel networks and cells in COPD and non-COPD lung tissue samples using micro-computed tomography and immunofluorescence - Matthew Lawson, United Kingdom

PP126 – Mitochondrial dysfunction in the aged lung and COPD: A role for mitochondrial calcium? - David Rowlands, USA

PP128 – The protein-profile of the lining fluid from small airways is changing with age - Anna-Carin Olin, Sweden

PP129 – Mitochondrial dysfunction induce immunoproteasome and MHC class I responses in lung aging - Xinyuan Wang, Germany

Group D - Chairs: Irene Heijink and Delphine Guillotin

PP130 – Endoplasmic reticulum stress implication in fibroblast senescence in COPD - Eva Delbrel, United Kingdom

PP131 – Metabolomics of lung tissue and plasma reveal human disease-relevant differences between young and old mice in the bleomycin model - Sorif Uddin, Germany

PP133 – Evidence of nutritional abnormalities in Chronic Obstructive Pulmonary Disease - Fatmaalzahraa Abdalrazik, Egypt

PP134 – Implication of mitochondrial metabolism in smooth muscle remodeling in asthma - Pauline Esteves, France

PP135 – Streptococcus pneumoniae induces broad alterations in mitochondrial functions in human airway epithelial cells - Mahyar Aghapour, Germany

PP136 – Comparison of metabolic profile in endothelial cells of chronic thromboembolic pulmonary hypertension and pulmonary arterial hypertension - Cristina Rodriguez, Spain

PP138 – Endothelial dysfunction in asthma: enos, inos and ace polymorphisms - Margarida Cortez e Castro, Portugal

PP139 – Oxidative stress drives cellular senescence and iron uptake in airway epithelial cells - Jonathan R. Baker, United Kingdom

Dinner for all delegates from 19:00
Saturday 07 March 2020

Session 3: Cellular senescence
Chair: Peter Barnes and Justine Devulder

08:45-09:05  Heme oxygenase-1 regulation of cell senescence in COPD
Reinhold Medina (Belfast, United Kingdom)

09:05-09:20  Discussion

09:20-09:40  Respiratory muscle senescence during chronic lung disease and
ageing
Joaquim Gea (Barcelona, Spain)

09:40-09:55  Discussion

09:55-10:10  OP07 – Aging causes alveolar epithelial type II cell dysfunction in
acute lung injury
Christina Brandenberger (Hannover, Germany)

10:10-10:25  OP08 – Versatile workflow for storage, characterization and cell-
type resolved transcriptional and epigenetic profiling of human
lung samples
Renata Jurkowska (Heidelberg, Germany)

10:25-10:45  An atlas of the aging lung mapped by single cell transcriptomics
and deep tissue proteomics
Herbert Schiller (Munich, Germany)

10:45-11:00  Discussion

GROUP PICTURE

11:15-13:45  Poster Session 2 and Lunch
Lunch will be served from 12:15

Group E - Chair: Phil Hansbro and Iva Hlapčić

PP201 – pSTAT5-SOCS1 signalling as a novel pathway in macrophage metabolic
reprogramming by Mesenchymal Stromal Cells (MSCs) in ARDS - Yue Su, United
Kingdom

PP202 – Fluticasone propionate inhibits rhinovirus-induced mucin production via
multiple mechanisms in differentiated airway epithelial cells - Ying Wang, Netherlands

PP203 – The metabolic response of human macrophages to Mycobacterium
tuberculosis infection - Claudio Bussi, United Kingdom

PP204 – GCN2 signalling is dysregulated in pulmonary fibrosis - Diana Santos Ribeiro,
Belgium

PP205 – Investigating the effect of Z alpha-1 antitrypsin expression on mitochondrial
injury - Arlene Glasgow, Ireland

PP206 – Epithelial-mesenchymal transition induced by cigarette smoke in lung
epithelial cells is associated with metabolic reprogramming and senescence - Serena
Di Vincenzo, Italy
PP207 – Transcriptome signatures of tobacco carcinogens hint the alteration of TAF6 as a specific feature in smokers lung cancer - Mario Pepe, Germany

PP208 – Prognostic significance of pre-operative body composition in early stage NSCLC patients - Marcin Skrzypski, United Kingdom

PP209 – Validation of a new strategy to maintain functional mitochondrial metabolism in conserved murine heart and lung tissues - Muriel Pichavant, France

PP210 – Direct effects of cigarette smoke in pulmonary arterial cells: Implications in arterial remodeling and vascular tone maintenance - María Jose Calzada, Spain

Group F - Chairs: Anna Krasnodembskaya and Charalambos Michaeloudes

PP211 – Fluorescence-activated cell sorting of senescent fibroblasts - Catherine Wrench, United Kingdom

PP212 – Longitudinal single-cell transcriptomics of gamma herpesvirus infection in mouse lungs - Ilias Angelidis, Germany

PP213 – Transcriptomic and proteomic analyses reveal age-related extracellular matrix changes in the lung - Maunick Lefin Koloko Ngassie, Netherlands

PP214 – Impact on pulmonary, intestinal and metabolic compartments of chronic smoking exposure and unhealthy diet: a functional and multi-omic approach - Elodie Picard, France

PP215 – The lung DNA methylation profile of patients with COPD: relationship with smoking and airflow limitation severity - Sandra Casas Recasens, Spain

PP216 – Alveolar type 2 cell LDL receptor associated protein 1 regulates surfactant homeostasis and pulmonary function - Itsaso Garcia Arcos, USA

PP217 – Modulation of dysregulated lipid metabolism by stem cell secretome in lung fibrosis - Amiq Gazdhar, Switzerland

PP218 – IRF5 regulates airway macrophage metabolic responses to viral challenge - Gesa Albers, United Kingdom

PP219 – Unravelling the genetic landscape of early-onset emphysema by whole exome sequencing - Susana Seixas, Portugal


Group G - Chairs: Reinoud Gosens and Ksenia Suska

PP221 – The respiratory microbiome and metabolome in chronic hypersensitivity pneumonitis - Rachele Invernizzi, United Kingdom

PP222 – Involvement of the kinase-dependent functions of RIPK1 in COPD - Hannelore Van Eeckhoutte, Belgium

PP224 – Glutathione-S-transferase P promotes Interleukin-1ß-induced inflammation and metabolic reprogramming in mice with allergic airways disease - Niki Reynaert, Netherlands

PP225 – Characterizing lung resident mesenchymal stem cells in idiopathic pulmonary fibrosis patients - Aina Martin, Spain

PP226 – Toll-like receptor signaling regulates the differentiation of 3D bronchospheres - Felix Ritzmann, Germany
PP227 – Prolonged WNT/ß-catenin signaling induces cellular senescence in aging and pulmonary fibrosis - Mareike Lehmann, Germany

PP228 – Effect of cigarette smoke on mitochondrial metabolic response to Mycobacterium tuberculosis (Mtbc) infection - Amit Agarwal, India

PP229 – The transcriptome of IPF fibrotic foci identifies the fatty acid metabolism as a critical pathway in fibrogenesis - Delphine Guillotin, United Kingdom

PP230 – MIF as a potential biomarker to monitor therapeutic response to glucocorticoid in patients with allergic asthma exacerbations - Hui-Yuan Zhu, China

Group H - Chairs: Darcy Wagner and Yan Hui Giam

PP231 – Study of the activation energy of thiourea transport in mesothelial cells using a calcein fluorescence quenching based method - Maria Kuzovleva, Russian Fed.

PP232 – Protein glycopatterns in bronchoalveolar lavage fluid as potential biomarkers for diagnosis of lung cancer - Lina Liu, China

PP233 – Immunological profiling of Chronic Obstructive Airways Disease and Idiopathic Pulmonary Fibrosis - Nuria Mendoza, Spain

PP234 – Single cell profiling reveals diversity of mouse and human lung mesenchymal cell types and their distinct activation states in fibrogenesis - Christoph H. Mayr, Germany

PP235 – Protein truncating mutations in ATP13A3 promote pulmonary arterial hypertension in mice - Ekaterina Legchenko, United Kingdom

PP236 – Diesel exhaust particles alter mitochondrial bioenergetics in human bronchial epithelial cells - Isabella Cattani-Cavalieri, Brazil

PP237 – Longitudinal effect of smoking cessation on transcriptomics and epigenetics in the airways of COPD patients and asymptomatic controls - Alen Faiz, Australia


PP239 – Early postnatal metabolism in the lung of premature infants characterized by amino acid depletion - Alida Kindt-Dunjko, Netherlands

PP240 – Interval Exercise Training Improves Asthma Symptoms Through Modulation of T2 Inflammation - Anna Freeman, United Kingdom
13:45-15:00  Young Investigator Session – The William MacNee Award
Chairs: Suzanne Cloonan and Silke Meiners

13:45-14:00 YI01 – Caspase-1 activation by cigarette smoke occurs via TLR4/TRIF/caspase-8 axis leading to metabolic alterations in human macrophages
Marco Buscetta (Palermo, Italy)

14:00-14:15 YI02 – The role of the COPD susceptibility gene FAM13A in barrier function and pro-inflammatory responses of human airway epithelial cells
Qing Chen (Groningen, Netherlands)

14:15-14:30 YI03 – Validation of AMP-activated protein kinase as a therapeutic target in bronchiectasis
Yan Hui Giam (Dundee, United Kingdom)

14:30-14:45 YI04 – Itaconate drives the resolution of pulmonary fibrosis
Patricia Ogger (London, United Kingdom)

14:45-15:00 YI05 – MiR-320d as a regulator of airway inflammation in COPD
Mirjam P. Roffel (Groningen, Netherlands)

15:00-17:00  Early-Career delegates session – Strategically and successfully funding of your future
Chairs: Louise Donnelly and Niki Ubags

15:00-15:10 Introduction

15:10-15:30 How to write a convincing research grant
Reinoud Gosens (Groningen, Netherlands)

15:30-15:50 Obtaining a grant to organize an ERS Research Seminar
Niki Ubags (Epalinges, Switzerland)

15:50-16:10 Your first personal research grant within the ERS fellowship programme
Louise Donnelly (London, United Kingdom)

16:10-16:30 Funding possibilities from the European Union (EU)/European Research Council (ERC)
Nadia El Mjyad (Brussels, Belgium)

16:30-17:00 Panel discussion with all speakers and networking event

17:00 Coffee Break

19:25-19:55 Evening Pre-dinner talk
Chair: Reinoud Gosens

“The mitochondrion revisited: an overview of its role in lung inflammation and lung ageing” – Phil Hansbro (Sydney, Australia)

From 20:00 Gala Dinner and Award Ceremony
Session 4: The ageing lung under stress
Chairs: Catherine Greene and Elena Lopez Rodriguez

08:45-09:05 Linking proteostasis to immune activation in the ageing lung
Silke Meiners (Munich, Germany)
09:05-09:20 Discussion

09:20-09:40 Protein oxidation as a driver of disease and gateway to novel therapies for lung fibrosis
Martina Korfei (Giessen, Germany)
09:40-09:55 Discussion

09:55-10:05 Coffee break

Session 5: Therapeutics targeting metabolic alterations in disease
Chairs: Jonathan Grigg and Serena Di Vincenzo

10:05-10:25 Metabolic reprogramming by mesenchymal stem cells as a strategy for lung repair
Anna Krasnodembskaya (Belfast, United Kingdom)
10:25-10:40 Discussion

10:40-11:00 Nutritional modulation to correct metabolic alterations in chronic lung disease
Annemie Schols (Maastricht, Netherlands)
11:00-11:15 Discussion

11:15-11:35 The promise of mTOR signaling as a therapeutic target for IPF
Rachel Chambers (London, United Kingdom)
11:35-11:50 Discussion

11:50-12:10 Conclusion by Reinoud Gosens, ERS Conferences and Seminars Director