



ERS

19th ERS LUNG SCIENCE CONFERENCE

Lung Science Conference **Repair and regeneration in chronic lung disease and lung cancer**

11-12 March 2021 – Virtual

Virtual programme as of 02.03.2021

The conference is granted with **8 CME credits** by the European Board for Accreditation on Pneumology (EBAP)

Day 1 – Thursday 11 March 2021

Opening Session

Chair: Reinoud Gosens

14:00-14:15

Welcome and Introduction

Reinoud Gosens, ERS Conferences and Seminars Director

14:15-14:25

Opening Lecture

“Is human pulmonary fibrosis simply lung regeneration without a blueprint?”

Naftali Kaminski (New Haven, USA)

14:25-14:30

Discussion

Session 1:

Cell plasticity in lung development and disease

Chair: Reinoud Gosens

14:30-14:40

iPSC derived lung stem cells as tools to understand lung regeneration and disease

Killian Hurley (Dublin, Ireland)

14:40-14:45

Discussion

14:45-14:55

The journey of stem cell differentiation during alveolar regeneration

Joo-Hyeon Lee (Cambridge, United Kingdom)

14:55-15:00

Discussion

15:00-15:10

Macrophage plasticity in COPD

Joachim Schultze (Bonn, Germany)

15:10-15:15

Discussion

Session 2:

Stem cell niche interactions

Chair: Darcy Wagner

15:15-15:25

Epithelial-mesenchymal interactions involving FGFs

Saverio Bellusci (Giessen, Germany)

15:25-15:30

Discussion

15:30-15:40

The role of the microvascular niche in lung regeneration

Edward Morrissey (Pennsylvania, USA)

15:40-15:45

Discussion

15:45-16:00

Break

16:00-17:00

Poster session 1 – Four break-out groups: A – D

3min Poster presentations following with general discussion.

All timings are in Central European Time (CET)



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Group A: Molecular pathology, cell biology and immunopathology

Chairs: Darcy Wagner and Manuela Platé

PP101 – Short-range interactions between fibrocytes and CD8+ T cells modulate the balance between tissue repair and destruction in COPD - Isabelle Dupin, France

PP102 – A serum biomarker reflecting human neutrophil elastase degraded calprotectin is elevated in COPD and IPF - Annika Hummersgaard Hansen, Denmark

PP103 – Dysregulation of ZFP36L1 and ZFP36L2 in asthma alters epithelial integrity and genome-wide glucocorticoid responses - Rocio Teresa Martinez-Nunez, United Kingdom

PP104 – Whole transcriptome analysis on lungs of house dust mite-exposed IGF1R-deficient mice provides new insights in allergic airway inflammation - Alfredo Urtubia, Spain

PP105 – Single-cell transcriptome analysis reveals an anomalous epithelial variation and ectopic inflammatory response in COPD - Naoaki Watanabe, Japan

PP106 – Identification of HuR-specific RNA interactome in TGFβ1-activated fibroblasts in response to cigarette smoke - Sofia Winslow, Sweden

PP107 – 3D printing aids simultaneous isolation of proximal and distal lung epithelial progenitors from individual mice - Hani N. Alsafadi, Sweden

PP108 – Role of TRIM-16-mediated lysophagy in COPD pathogenesis - Yusuke Hosaka, Japan

PP109- Coxsackie and Adenovirus Receptor (CAR) controls lung epithelial cell responses to inflammation - Elena Ortiz Zapater, United Kingdom

PP110 – Modulation of the TGF-β-induced epithelial-to-mesenchymal transition by pan-selective PDE inhibitors in A549 cells - Katarzyna Wójcik-Pszczola, Poland

Group B: Airway diseases

Chairs: Louise Donnelly and Gesa Albers

PP111 – PGE2 and PGI2 restore defective lung epithelial progenitors induced by cigarette smoke - Xinhui Wu, Netherlands

PP112 – Itaconate regulates responses to inhaled aeroallergen - Gesa Albers, United Kingdom

PP113 – Epidermal growth factor receptor in airway remodelling during allergic airway disease – divergent roles during early life and adulthood? - Helen Stöling, United Kingdom

PP114 – Mesenchymal stromal cells reduce house dust mite induced allergic airway inflammation in a humanised MIF expressing mouse model - Ian Hawthorne, Ireland

PP115 – COL4A3 degradation predicts anti-IgE response in severe asthma - Markus Weckmann, Germany

PP116 – Associations between pediatric asthma and adult lung diseases - Nirmin Juber, Taiwan

PP117 – Household use of biomass fuel is associated with childhood wheeze and eczema: a cross sectional study of rural communities in Kandy, Sri Lanka - Olivia Lall, Australia

PP118 – Ambient PM2.5 Exposure and Respiratory Disease Hospitalization in Kandy, Sri Lanka - Gayan Bowatte, Sri Lanka

PP119 – COL4A3 expression in asthmatic epithelium depends on intronic methylation and ZNF263 binding - Sai Sneha Priya Nemani, Germany

PP120 – Smoking alters gene expression and methylation patterns in asthma patient nasal epithelium - Karosham (Diren) Reddy, Australia



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Group C: Mechanisms of lung injury and repair I

Chairs: Herbert Schiller and Ioannis Tomos

PP121 – Gaq/11 and Ga12/13 promote pulmonary fibrosis by driving distinct myofibroblast functions - Amanda Goodwin, United Kingdom

PP122 – AT2 cell delivery using rECM microcarriers for COPD treatment - Deniz Ali Bölükbas, Sweden

PP123 – Dimethyl fumarate attenuates lung inflammation and oxidative stress induced by chronic exposure to diesel exhaust particles in mice - Isabella Cattani-Cavaliere, Netherlands

PP124 – Establishment of a human in vitro model for airway epithelial repair and regeneration - Ashesh Chakraborty, Germany

PP125 – Glycogen synthase kinase-3 inhibition by CHIR99021 promotes alveolar epithelial cell proliferation and lung regeneration in acute lung injury - Raquel Fernandes, Portugal

PP126 – RANKL contributes to lung tissue repair via promoting type II epithelial cell proliferation - Habibie Habibie, Netherlands

PP127 – Three-dimensional niches for the physiological-like expansion of a lung mesenchymal stromal cell subpopulation - Arturo Ibáñez Fonseca, Sweden

PP128 – Investigating the role of vitamin A intake and retinoic acid signalling in lung homeostasis and repair-A multidisciplinary approach - Róisín Mongey, United Kingdom

PP129 – Safety evaluation of cancer immunotherapy in a lung-on-chip model: the therapeutic FOLR1 targeting T Cell Bispecific antibody - Giulia Raggi, Switzerland

PP130 – Spatial characteristics of CD169+ resident conducting airway macrophages during Aspergillus fumigatus-induced inflammation - Marina Shevchenko, Russia

Group D: Lung cancer, thoracic surgery and imaging

Chairs: Sam Janes and Julie Worrell

PP131 – Macrophages in lung adenocarcinoma - Giannoula Ntaliarda, Greece

PP132 – Reversible fetal tracheal occlusion in mice: a novel transuterine method - Nilhan Torlak, Turkey

PP133 – IGF1R acts in the tumor microenvironment as a cancer-promoting factor facilitating the implantation and progression of lung metastasis - Elvira Alfaro Arnedo, Spain

PP134 – Mapping of Kras mutations during chemical carcinogenesis - Sabine Behrend, Germany

PP135 – Mutational RNA signatures in environmentally-induced lung adenocarcinoma - Georgia A. Giotopoulou, Germany

PP136 – Preclinical evaluation of IL-1 β inhibition against KRAS-mutant lung adenocarcinoma - Georgios Skiadas, Greece

PP137 – Airway cells in adult lung homeostasis and carcinogenesis - Magda Spella, Greece

PP138 – Regulation of PA200 in lung cancer - Ayse Seda Yazgılı, Germany

PP139 – Characterization of reduced pulmonary arterial branching in rat with congenital diaphragmatic hernia: Automated quantitative imaging analysis - Emrah Aydin, Turkey

17:00-17:15 Break with intersession slides

17:15-18:15 Poster session 2 – Four break-out groups: E – H
3min Poster presentations following with general discussion.



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Group E: *Mechanisms of lung injury and repair II*

Chairs: Darcy Wagner and Nirmin Juber

PP201 – Therapeutic targeting of iBALT induces lung regeneration in COPD - Thomas Conlon, Germany

PP202 – Recreating the 3D environment for airway fibroblasts and epithelial cells with lung extracellular matrix derived hydrogels - Roderick H.J. de Hilster, Netherlands

PP203 – Club cell functions as a Wnt-responsive progenitor for tissue repair in COPD - Yan Hu, USA

PP205 – Effect of mTOR inhibition in a 3D in vitro model of alveolar epithelium and epithelial regeneration - Manuela Platé, United Kingdom

PP206 – Modeling idiopathic pulmonary fibrosis using induced pluripotent stem cell-derived alveolar epithelial organoids - Victoria Ptasinski, Sweden

PP207 – Targeting p16INK4a in alveolar type 2 cells to induce endogenous lung alveolar regeneration - Bruno Ribeiro Baptista, France

PP208 – SRC family kinases modulate molecular pathways associated with mitochondrial dysfunction in idiopathic pulmonary fibrosis - Carmen Veith, Germany

PP209 – Mitochondrial DNA stress activates MHC class I antigen presentation and CD8+ T-cell immunity: implications for pulmonary fibrosis - Xinyuan Wang, Germany

Group F: *Interstitial Lung and Pulmonary Vascular Diseases*

Chairs: Louise Donnelly and Hani N. Alsafadi

PP211 – Galectin-3 is elevated following nintedanib treatment - Gali Epstein Shochet, Israel

PP212 – The Anti-Fibrotic Drug Nintedanib Promotes Repair Macrophages - Carolin Koss, Germany

PP213 – Adoptive transfer of hepatocyte growth factor transfected T cells in a bleomycin injured murine lung model - Seyran Mutlu, Switzerland

PP214 – Human precision-cut lung slices generated from excess donor lungs as a model for IPF and drug screening - John Stegmayr, Sweden

PP215 – The effect of long-term personal air pollution exposure on the inflammatory mediators in Idiopathic Pulmonary Fibrosis - Ioannis Tomos, Greece

PP216 – Glucocorticoids exacerbate TGF β 1 mediated fibrotic signalling in lung fibroblasts by inhibition of metalloproteinase expression and activity - Muzamil Majid Khan, Germany

PP217 – Modeling idiopathic pulmonary fibrosis on a lung-on-chip - Lea de Maddalena, Switzerland

PP218 – Direct effects of cigarette smoke in pulmonary arterial cells: Implications in arterial remodeling and vascular tone maintenance - Javier Sevilla-Montero, Spain

PP219 – Development and Validation of a Novel Prognostic Nomogram for COPD patients with Pulmonary Hypertension - Dansha Zhou, China

PP220 – Hypercoagulability in patients with stable COPD assessed by coagulation factor levels - Chris Kyriakopoulos, Greece

Group G: *Respiratory infections and developmental biology*

Chairs: Herbert Schiller and Helen Stölting

PP221 – EZH2-dependent transcriptional complex promotes aberrant epithelial remodelling after injury - Huy Le, Germany



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PP222 – Forkhead Box F1 as a mediator of Wnt signaling in human lung endothelial cells - Gabriëla Edel, Netherlands

PP223 – N-Acetyl cysteine rescues neonatal lethality caused by HRas/NRas deficiency by improving lung maturation and decreasing oxidative stress - Rocío Fuentes Mateos, Spain

PP224 – Cellular Effects of Moderate Hyperoxia in the Developing Lung - Erika Gonzalez, Germany

PP225 – Development of a 3D in vitro co-culture model of the airway mucosa using human primary cells - Cinta Iriondo, Netherlands

PP226 – Decellularized extracellular matrix hydrogels for human airway organoid culture - Sinem Tas, Sweden

PP227 – Paper-based biosensor for the detection of sepsis murine using MMP9 and a9B6, integrins RI Class1 and R2 Class 2 peptides - Nuha Alekhmimi, Saudi Arabia

PP228 – Chest CT findings on admission of COVID-19 pneumonia and its association with disease severity and duration of illness: a retrospective study - Eleanor Dela Pena, Philippines

PP229 – Clinical profile of 116 patients undergoing post-COVID follow-up - A prospective study - Pranav Modi, India

PP230 – Functional profiling and visualization of stromal cell dynamics in the influenza virus infected lung - Julie Worrell, United Kingdom

Group H: [Mechanisms of lung injury and repair III](#)

Chairs: Sam Janes and Amanda Goodwin

PP231 – Released mediators in ex vivo 3D-model of lung fibrosis correspond to elevated serum biomarkers in IPF - Dimitrios Kalafatis, Sweden

PP232 – IL11 negatively impacts adult lung alveolar organoid formation - Rosa K. Kortekaas, Netherlands

PP233 – Crosstalk between lung fibroblasts and mast cells is modified by alveolar extracellular matrix and influences epithelial migration - Anna-Karin Larsson-Callerfelt, Sweden

PP234 – Lung-on-a-chip device for modelling of ventilator induced lung injury - Emil Rehnberg, Sweden

PP236 – Elastin-like-recombinamer cryogel as a platform for lung regeneration - Zackarias Söderlund, Sweden

PP237 – D-dopachrome tautomerase contributes to lung epithelial repair via ACKR3-dependent Akt signalling - Shanshan Song, Netherlands

PP238 – Role of mitochondrial function of lung mesenchymal stem cells in idiopathic pulmonary fibrosis - Joan Truyols, Spain

PP239 – Decellularised porcine pleural patches for management of prolonged alveolar air leaks - Trisha Vikranth, United Kingdom

PP240 – COL4A3 degradation is increased in severe, type 2 exacerbating asthmatics - Markus Weckmann, Germany

[Abstracts accepted as an ePosters only – no Session:](#)

PP301 – The role of the systemic inflammation in bronchiectasis exacerbation frequency - Kseniia Suska, Ukraine

PP302 – The relationship between the level of C-reactive protein and the general cardiovascular risk in patients with COPD and hypertension - Olha Boiko, Ukraine



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PP303 – Effects of mild to moderate asthma in pregnancy on the wellbeing of mother and newborn; A case control study from Sri Lanka - Duminda Yasaratne, Sri Lanka

PP304 – The effect of exercises on flat and sloping levels on muscle mass and functional capacity in chronic obstructive pulmonary disease patients - Samira Nakhaie, Iran

PP305 – Can Hematological Ratios Predict Outcome of COVID-19 Patients? Egyptian Multicentric Study - Mai Aly, Egypt

PP306 – Submicroscopic changes of type I alveolocytes in the early stages of experimental diabetes mellitus - Yuliya Fedorchenko, Ukraine

PP307 – The role of microalbuminuria (MAB) in patients admitted for an Acute COPD Exacerbation (AECOPD) - Chris Kyriakopoulos, Greece

PP308 – Endothelial injury in Chronic Obstructive Pulmonary Disease assessed by microalbuminuria (MAB) and von Willebrand factor levels and activity - Chris Kyriakopoulos, Greece

PP309 – Effect of elexacaftor-tezacaftor-ivacaftor on pulmonary and endothelial function in a patient with advanced cystic fibrosis - Saša Rink, Slovenia

PP310 – Association of testosterone with lung function in patients with chronic obstructive lung disease - Abir Hedhli, Tunisia

PP311 – Nontypeable Haemophilus influenzae supresses SP-B and SP-C expression in alveolar epithelial type II cells - Hannah Sophie Stodden, Germany

PP312 – Diagnosis of non severe pulmonary embolism - Salma Aït Batahar, Morocco

PP313 – Agreement between expert sonographers and artificial intelligence in the evaluation of lung ultrasound data acquired from COVID-19 patients - Libertario Demi, Italy

18:15-19:15 **Mentorship session (Option 1)**

Day 2 – Friday 12 March 2021

10:00-12:15 **Early-Career delegates session – Research output for career advancement: When, where and how?**

Chairs: Niki Ubags and Darcy Wagner

10:00-10:15 **Introduction**
Niki Ubags (Epalinges, Switzerland)

10:15-10:25 **The use of Pre-prints to publish your science**
Darcy Wagner (Lund, Sweden)

10:25-10:30 Discussion

10:30-10:40 **How to write a peer review**
Pieter Hiemstra (Leiden, Netherlands)

10:40-10:45 Discussion

10:45-10:55 **How to make me like your paper (part 1)**
Martin Kolb (Hamilton, Canada)

10:55-11:00 Discussion



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- 11:00-11:10** **How to make me like your paper (part 2)**
Susanne Herold (Giessen, Germany)
- 11:10-11:15 Discussion
- 11:15-12:15** **Panel discussion**
- 12:30-13:30** **Mentorship session (Option 2)**
12:30-13:30 *Lunch break*
- Session 3:** **Epithelial stem cell in disease**
Chair: Herbert Schiller
- 14:00-14:10** **Tobacco smoking and somatic mutations in human bronchial epithelium**
Sam Janes (London, United Kingdom)
- 14:10-14:15 Discussion
- 14:15-14:25** **Interplay between viral infections and epithelial progenitors in the lung**
Susanne Herold (Giessen, Germany)
- 14:25-14:30 Discussion
- 14:30-14:40** **Club cells in adenocarcinoma and alveolar repair**
Georgios Stathopoulos (Munich, Germany)
- 14:40-14:45 Discussion
- 14:45-15:45** **Young Investigator Session – The William MacNee Award**
Five 9 min presentations following with general discussion.
- Chair: Reinoud Gosens
- YI401 - A comprehensive guide to pulmonary mesenchymal populations in the healthy and IPF lung** - Simon Coyle Rowan (Dublin, Ireland)
- YI402 - Host response towards decellularised lung extracellular matrix reinforced biopinks for 3D bioprinting lung tissue for transplantation** - Martina M. De Santis (Lund, Sweden)
- YI403 - cAMP response element-binding protein mediates immune-evasion of KRAS-mutant lung adenocarcinoma** - Georgia A. Giotopoulou (Munich, Germany)
- YI404 - Pluripotent stem cell derived airway cholinergic neurons for disease modelling of neuroplasticity in asthma** - Pien Goldsteen (Groningen, Netherlands)
- YI405 - Use of differentiated primary human airway epithelial models to study SARS-CoV-2 infection biology and pathogenesis** - Ying Wang (Leiden, Netherlands)
- 15:45-16:00 *Break*

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Keynote Lecture

Chair: Sam Janes

- 16:00-16:20** **Uncovering the cells and genes responsible for salamander limb regeneration**
Nicholas Leigh (Lund, Sweden)
- 16:20-16:25 Discussion

Session 4: **Cell-matrix interactions**

Chair: Sam Janes

- 16:25-16:35** **Cell-matrix interactions in chronic lung disease**
Janette Burgess (Groningen, Netherlands)
- 16:35-16:40 Discussion
- 16:40-16:50** **Regulation of cell fate and integrity by mechanical signals**
Sara Wickström (Helsinki, Finland)
- 16:50-16:55 Discussion

Session 5: **Therapies: organoids, drugs, cell therapy**

Chair: Reinoud Gosens

- 16:55-17:05** **Lung organoids reveal epithelial-mesenchymal mechanisms of lung disease and potential therapy**
Carla Kim (Boston, USA)
- 17:05-17:10 Discussion
- 17:10-17:20** **Mesenchymal stem cell therapy for severe emphysema**
Pieter Hiemstra (Leiden, Netherlands)
- 17:20-17:25 Discussion
- 17:25-17:35** **Cellular reprogramming of cancer cells to antigen-presenting cells**
Filipe Pereira (Lund, Sweden)
- 17:35-17:40 Discussion
- 17:40-18:10 Awards announcement and conclusion by Reinoud Gosens, ERS Conferences and Seminars Director

e-Poster platform available from Monday 8th March to Sunday 31st March 2021

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