

# DBMR Research Conference

Date **October 5, 2020, 5 pm – 6 pm**

Title **Building the lung: progress and challenges in human lung development and its relevance to patients**

Speaker **Dr. Marko Nikolic**  
**Division of Medicine, Rayne Institute, University College London, London, UK**

**Bio:** Marko Nikolić is a UKRI Innovation/Rutherford Fellow as part of the UK Regenerative Medicine Platform. After completing a Wellcome PhD Programme for Clinicians and a post-doctoral Clinical Lectureship at the Gurdon Institute in Cambridge with Emma Rawlins, he moved to University College London to set up his independent research group. He is interested in developmental and stem cell biology in the context of lung regeneration. He continues his clinical commitments as a Honorary Consultant in Respiratory Medicine at Royal Papworth and Cambridge University Hospitals NHS Foundation Trusts.

**Abstract:** Regeneration of healthy lung tissue in patients with end-stage respiratory disease (ESRD) would cure disease, rather than treating symptoms. For this a detailed understanding of lung development is needed and the mouse has been used extensively as an in vivo genetically-modifiable model. Differentiation and validation of human induced pluripotent stem cells (hiPSCs) is entirely based on mouse literature. The most important epithelial stem cell population in developing lungs is found in distal branching tips, and these Sox9+ lung epithelial stem cells (LESCs) generate all epithelial lineages. We developed a self-renewing, genetically-modifiable epithelial 3D in vitro culture system from human embryonic LESCs, which can be differentiated into alveolar and bronchiolar cells both in vitro and in vivo using xenotransplantation into bleomycin-injured mouse lungs or kidney capsule. We anticipate that this work will bring us closer to lung regeneration by guiding the development of improved protocols for hiPSC differentiation and manipulation of adult stem cells in vivo, with benefits for patients with ESRD.

**Dr. Marko Nikolic has been invited by Dr. phil. Fabian Blank, DBMR Lung Research Cluster**

The lecture will take place as a zoom meeting.  
For those wishing to attend, please use this link

Zoom-Meeting beitreten:

<https://unibe-ch.zoom.us/j/97984719631?pwd=Q210Ykh3d1lQWnRtQjVxV0lzdklMQT09>

Meeting-ID: 979 8471 9631

Kenncode: 613844

or scan the QR code for the details



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Next DBMR Research Conference

**December 7, 2020**

**Prof. Dr. Alexander Bartelt,**

*Klinikum der Institute for Cardiovascular Prevention  
Ludwig-Maximilians-University, Munich, DE*



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