

## Faculty



### Mark O. Wielpütz, MD

#### Research Interests

Functional imaging of airway disease  
Lung Perfusion imaging by MRI and DECT  
Computerized image analysis  
Computer-aided diagnosis CAD  
Imaging of mouse models for airway disease

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## Short CV

### Affiliation

Mark O. Wielpütz

Resident in Radiology, Department of Diagnostic and Interventional Radiology

Head of Junior Research Group for Structural and Functional Airway Imaging (JRG-SFI)

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### Curriculum Vitae

2002 – Medical School: University of Erlangen–Nuremberg, Germany, and the University of

2008 Sydney, Australia

2009 Dissertation (M.D.) ,University of Erlangen–Nuremberg

Since Clinical training in Radiology at the Department of Diagnostic and Interventional

2009 Radiology, University Hospital Heidelberg

Since Junior Research Group Leader: Structural and Functional Airway Imaging ; German

2012 Center for Lung Research DZL

2012 Principal Investigator , German Center for Lung Research, Translational Lung Research Center, Heidelberg

### Honours & Awards

2005 Sofie–Wallner–Preis for Cancer Research

2006 Member of Leonardo Elite Kolleg, University of Erlangen–Nuremberg

### Projects

The JRG-SFI has its focus on structural and functional imaging of the airways. Precisely, the group will develop new methods for imaging of epithelial function in health and disease to allow a more direct quantification of regional airway function. This will cover pre-clinical imaging, but also the translation of newly derived evidence into clinical imaging.

- An established mouse model for cystic fibrosis (CF) lung disease, but possibly also for chronic-obstructive pulmonary disease (COPD), the  $\beta$ -ENaC-transgenic mouse, will be subject to functional imaging methods. This project will be conducted in close cooperation with Prof. Dr. M. Mall. Especially Magnetic Resonance Imaging and Volumetric Computed Tomography will be developed toward an outcome measure for interventional trials in this mouse model.
- Dual-energy computed tomography (DECT), will be the main focus in a cooperative project together with Dr. W. Stiller, a physicist at the Department of Radiology in Heidelberg. This innovative method has the potential for quantitative imaging of regional lung perfusion, and thus airway function. To accomplish this task, it will be necessary to develop new models for lung perfusion and to adapt these to the conditions of DECT imaging.

The JRG-SFI is a partner in the Platform Imaging and contributes to the disease areas CF and COPD.

### Funding

Federal Ministry for education and research (BMBF)

German Research Foundation (DFG)

**Team****Post-doctoral fellows**

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## Selected Publications

### Peer reviewed publications

1. **M. O. Wielpütz, M. Eichinger, O. Weinheimer, S. Ley, M. A. Mall, M. Wiebel, A. Bischoff, H.-U. Kauczor, C. P. Heußel and M. Puderbach (2012).** "Automatic airway analysis on multidetector computed tomography in cystic fibrosis – correlation with pulmonary function testing." *J Thorac Imaging* published ahead of print
2. **M. O. Wielpütz, M. Eichinger, Z. Zhou, K. Leotta, S. Hirtz, S. H. Bartling, W. Semmler, H.-U. Kauczor, M. Puderbach and M. A. Mall (2011).** "In vivo monitoring of cystic fibrosis-like lung disease in mice by volumetric computed tomography." *Eur Respir J* 38(5):1060-70
3. **M. Eichinger, D.-E. Optazaite, A. Kopp-Schneider, C. Hintze, J. Biederer, A. Niemann, M. A. Mall, M. O. Wielpütz, H.-U. Kauczor and M. Puderbach (2011).** "Morphologic and functional scoring of cystic fibrosis lung disease using MRI." *Eur J Radiol* 38(5):1060-70
4. **R. Lopez-Benítez, M. O. Wielpütz, M. G. H. Bryant, Tom Ganten, G. M. Richter, N. Flach and P. J. Hallscheidt (2011).** "Percutaneous Treatment of Biliary Cast Syndrome After Orthotopic Liver Transplantation: Comparison of Mechanical Versus Hydraulic Rheolytic Cast Extraction." *Cardiovasc Intervent Radiol* 34(5):998-1005
5. **M. O. Wielpütz, I.-H. Lee, S. Boulkroun, N. Farman, D. I. Cook, C. Korbmacher and R. Rauh (2007).** "(NDRG2) stimulates amiloride-sensitive Na<sup>+</sup> currents in *Xenopus laevis* oocytes and Fisher Rat Thyroid cells." *J Biol Chem* 282(38), 28264-28273