

### Hannover Medical School

In the BREATH research network, outstanding importance is placed on clinical research at the MHH. The main emphasis lies in the field of lung transplantation and stem cell therapy, focussing on endstage and obstructive lung disease.

Those departments involved in BREATH at the MHH are:

- Department of Respiratory Medicine
- Department of Pediatric Pneumology, Allergology and Neonatology
- Division of Cardiac, Thoracic, Transplantation and Vascular Surgery
- Clinic for Immunology and Rheumatology
- Institute of General Practice
- Institute of Functional and Applied Anatomy
- Department of Diagnostic and Interventional Radiology

### Fraunhofer ITEM

In cooperation with the Fraunhofer ITEM, research is carried out in the field of chronic obstructive pulmonary disease and on the pathophysiology of allergic diseases, during which, for example, methods in the pollen exposure room are used for selective provocation. Asthma and allergy research is a further research focus for BREATH.

### Leibniz Universität Hannover

The LUH contributes to the research network with the important expert knowledge of its medical doctors, economists and health scientists in the field of health services research and with regard to questions of health economics.

### CAPNETZ

CAPNETZ is a Germany-wide research network, which focuses on the improvement of care for patients with community-acquired pneumonia (CAP). In a large epidemiological study, data on pathogens and pathogen resistance as well as information on the diagnostics and therapy of CAP patients are collected.



[www.breath-hannover.de](http://www.breath-hannover.de)

### Contact

BREATH – BIOMEDICAL RESEARCH IN ENDSTAGE AND OBSTRUCTIVE LUNG DISEASE HANNOVER

Member of the German Center for Lung Research

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# Breathing new life into lung research.

Member of the German Center for Lung Research



Deutsches Zentrum für  
Lungenforschung

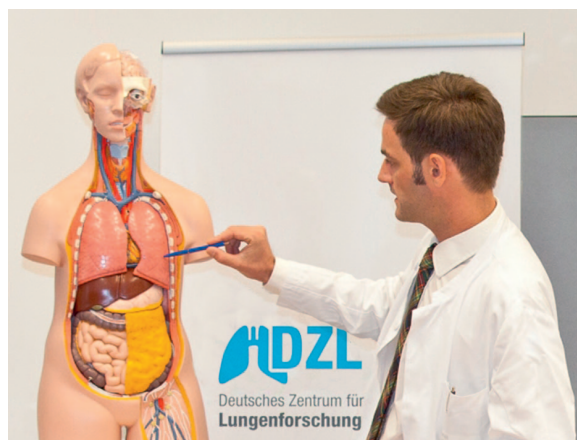
In the BREATH research network, more than 50 doctors and scientists have come together to do research on subjects related to lung diseases. There is also a close cooperation with the Cluster of Excellence REBIRTH.

BREATH is one of the five sites of the German Center for Lung Research (Deutsches Zentrum für Lungenforschung – DZL). In line with the common mission of using “**translational research to combat most important lung diseases**”, the scientists are focussed on the transfer of research results and knowledge to clinical use.

Due to the multifaceted range of specialization of the doctors and scientists participating in BREATH, the site is involved in the research of all eight lung diseases on which the DZL focuses:

- Asthma and allergy
- Pneumonia – acute lung injury
- Chronic obstructive pulmonary disease
- Cystic fibrosis
- Diffuse parenchymal lung disease
- End-stage lung disease
- Lung cancer
- Pulmonary hypertension

Hannover Medical School (MHH) is the largest lung transplant center in Europe. Among the outstanding achievements in recent years are the ECMO (extracorporeal membrane oxygenation) on conscious patients, studies on the Organ Care System of the lung for preservation and improvement of donor lungs and the first living lung donor transplant performed in Germany in 2012.

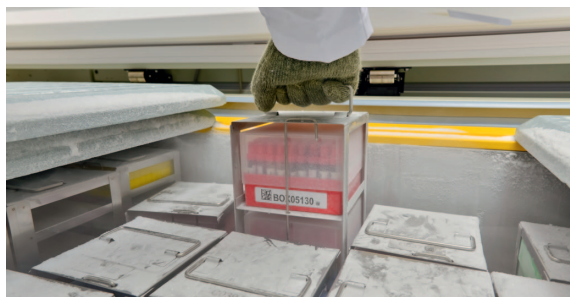


The Biobank and Imaging platforms also make a considerable contribution to the study of lung diseases.

### Hannover Unified Biobank (HUB)

The HUB has been established at the MHH, providing a centralized, harmonized, modern and unified biobank to develop and implement demanding biobanking standards. Biomaterials are processed here according to Standard Operating Procedures with a high degree of automation.

HUB stands for the highest quality standards and outstanding sample safety at the BREATH site, constituting an important factor in the overall strategy of biobanking in the DZL.



### Imaging

Imaging procedures are key instruments in the understanding of living systems.

The imaging platform at BREATH covers the full spectrum of imaging techniques and levels of resolution, from radiological imaging of the complete human lung to small animals (CT, micro-CT, MRT, PET, FMT), and from high-resolution electron microscopy (TEM, cryo-EM, immuno-EM, electron tomography) to quantification of the lung structure (stereology).



BREATH attaches particular importance to the qualified promotion of young researchers.

In the BREATH research network, it is possible, after completion of a doctoral degree, to gain a temporary position as a scientist, financed mainly from external sources.

The area of application as a **Post-Doc** lies in the field of biomedical translational research of lung diseases. Post-Docs in Hannover gain a sound consolidation of their scientific abilities and skills, and particularly support in expanding their list of publications.

The **German-French Lung School** offers the possibility of an exchange with first-class institutions in France.

**PhD students** are also welcome on the BREATH research projects and can apply to the DZL for a scholarship to work on them.

A special **PhD program** in the field of lung research is currently being set up.

