Measuring Success Within the German Center for Lung Research
Implications for Research Integrity

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(MEMBERS OF THE GERMAN CENTER FOR LUNG RESEARCH)
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Conflict of Interest Klaus F. Rabe:

I am a director of the German Center for Lung Research (DZL), a position which is not renumerated. My travel to this meeting is funded by DZL.

My institution receives federal funding for the research activities of the DZL

I have been involved in drug development and have spoken in educational events and witnessed for the pharmaceutical industry in front of EMA and FDA

I hold no shares or have any proprietary interest in any pharmaceutical company

I have never worked with the tobacco industry (and never will)
2009  Federal Government in Germany Resolution
“Health Research Framework Program”

6 German Centers of Health Research form the core of the program
200 Mio € p. a. for the Centers, funded by the Federal Ministry for
Education and Research (BMBF) (90%) and the host States (10%)
Long term “institutions” envisioned

2009  German Center for Diabetes Research (DZD)
  German Center for Neurodegenerative Diseases (DZNE)

2011  German Center for Cardiovascular Research (DZHK)
  German Center for Infection Research (DZIF)
  German Consortium for Translational Cancer Research (DKTK)
  German Center for Lung Research (DZL)
German Centers of Health Research

- Deutsches Zentrum für Herz-Kreislauf-Forschung (DZHK)
- Deutsches Zentrum für Infektionsforschung (DZIF)
- Deutsches Zentrum für Lungenforschung (DZL)
- Deutsches Konsortium für Translationale Krebsforschung (DKTK)
- Deutsches Zentrum für Diabetesforschung (DZD)
- Deutsches Zentrum für Neurodegenerative Erkrankungen (DZNE)
DZL Organization

• **5 Coordinating Centers**
• **22 Research Institutions**
  – Universities with hospitals
  – Top non-academic research institutions
• **> 200 affiliated Principal Investigators**
• Coordinated by **Central Office** in Giessen
• **Oversight Bodies**
  – International Scientific Advisory Board
  – General Assembly
  – Commission of Funding Authorities
Mission Statement of the DZL

Translational Research to Combat Widespread Lung Diseases
DZL Scientific Advisory Board

- **Peter J Barnes**, Imperial College London, UK
- **Rachel Chambers**, University College London, UK
- **Jeffrey Drazen**, Harvard Medical School, Boston, USA
- **Stuart Elborn**, Queens University Belfast, UK
- **Mark Gladwin**, University of Pittsburgh Medical Center, USA
- **Marlene Rabinovitch**, Stanford University, Palo Alto, USA
- **Susan Shurin**, National Institutes of Health, Bethesda, USA
- **Peter Suter**, University of Geneva, Switzerland
- **Jacob Sznajder**, Northwestern University Feinberg School of Medicine, Chicago, USA
Disease Areas in Focus of the DZL

- Asthma and Allergy (AA)
- Chronic Obstructive Lung Disease/Emphysema (COPD)
- Cystic Fibrosis (CF)
- Pneumonia and Acute Lung Injury (ALI)
- Diffuse Parenchymal Lung Disease (DPLD)
- Pulmonary Hypertension (PH)
- End-stage Lung Disease (ELD)
- Lung Cancer (LC)
Unifying Scientific Concept

**Generation Regeneration Repair**
- Stem/progenitor cells
- Signaling in morphogenesis
- Role in pathological remodeling
- Exploitation for reverse remodeling and regeneration

**Inflammation Resolution**
- non-infectious
- infectious
- Initiation, spatial control and termination of inflammatory sequelae
- Control of mucus hypersecretion, goblet cell metaplasia and airway liquid homeostasis
- Harnessing for anti-inflammatory, anti-obstructive and resolution promoting therapy and tissue repair

**Hyperproliferation**
- benign
- malignant
- Control of pulmonary cellularity and matrix homeostasis
- Dissection of cellular and molecular players driving benign and malignant hyperproliferation
- Identification of targets for innovative therapies
Concerted Translational Strategy

- Disease cohorts, epidemiology, health care
- "Deep phenotyping", clinical pilot trials, phase II/III trials, exploitation and implementation
- Biobanking, human repositories, biomarker studies
- Preclinical trials and pulmonary pharmacotherapy
- Pathophysiology and disease models
- Developmental and system biology
- Functional genomic and cellular phenotypes (incl. stem cells)
- Molecular signatures and target structures
Commitment to Infrastructure

• Biobank
• Imaging Platform
• Unified Data Management Platform
• DZL Technology Transfer Consortium

Commitment to Training and Outreach

• International Lung School (Germany-France)
• DZL Mentoring Program
• Lung Information Service
Core Facilities At Various DZL Sites

• Genetics
• Transcriptomics/Epigenetics/microRNA
• Lipidomics/Metabolomics/Proteomics
• Microbiome
• Bioinformatics, Systems Biology
• Phase I/IIa Trial Centre
• GLP Animal Facility
• Lung Stem Cell and Transfection Unit
• Aerosol Technology and inhalation chambers
• Systems Medicine
• Animal Models in all Disease Areas
Measuring Success Within the German Center for Lung Research

Implications for Research Integrity

- **Common Mission Statement**
  
  *Translational research to combat widespread lung diseases*

- **Complementary Disease focus**
  
  *Airway – Lung Parenchyma – Vasculature*  
  *Pediatric – Adult*

- **Complementary Expertise**
  
  *Basic Science – Disease-orientated - Patient-orientated - Epidemiological Research*

- **Complementary Institutional Background**
  
  *Helmholtz – Max Planck – Leibniz – Fraunhofer – University Hospitals – Pneumology Centers*

- **Bundling of Resources**
  
  *Knowledge – Technologies – Biobanks – Patient cohorts*

- **Synergies in Technologies**
  
  *Molecular Tools – Animal Models – Imaging & Biobank – Clinical Trials & Epidemiology*

- **Synergies in Budgetary Focus**
  
  *Investment in shared technologies – Coherent development strategy*

- **Incentives for Cooperation**
  
  *Largely cooperative disease programs – Clinical trial funds – Exchange programs*
Research outcome measures include the number of new experimental models established, targets and biomarkers identified or introduced into clinical studies, and therapies or diagnostic procedures entered into clinical practice.
New metrics for translational research

- Clinical programmes include initiation of and participation in clinical studies by the organisation’s faculty, and new registries or clinical cohorts

*Megan Grether, Oliver Eickelberg, Marcus A Mall, Klaus F Rabe, Tobias Welte, Werner Seeger, for the German Center for Lung Research*
• Development, maintenance, and use of a common infrastructure, which otherwise might not exist, is a key indicator of the value added through creation of a large translational research programme (eg, biomaterial repositories, image databases, and unified data management structures)
New metrics for translational research

- Output measures include the number and effectiveness of publications in the field, H index of faculty, number of patents filed, third party funding, and evidence of increased collaboration as measured by shared authorship across partners and centres.
Networking, training, and outreach were emphasised by the US Institute of Medicine as core elements of the Clinical and Translational Science Award programme, which is in line with the DZL view; these measures include initiation of and participation in national and international research consortia, implementation of programme-wide training, mentoring and clinician-scientist career programmes, workshops and symposia for the scientific community or general public, and web-based educational initiatives.
<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Conference Title</th>
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<tbody>
<tr>
<td>2012</td>
<td>Marburg UGMLC</td>
<td>Remodeling, Repair and Regeneration in Lung Diseases</td>
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<tr>
<td>2013</td>
<td>Munich CPC-M</td>
<td>Lung Aging: Molecular Mechanisms and Clinical Relevance</td>
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<tr>
<td>2014</td>
<td>Hannover BREATH</td>
<td>Lung Regeneration and Beyond: BREATH meetings REBIRTH</td>
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Save the Date!

Frontiers in Chronic and Malignant Airway Disease

June 25 – 27, 2015

Kongresshaus Stadthalle
Heidelberg, Germany
The German Center for Lung Research
The German Center for Lung Research (DZL) is an association of the leading university and non-university institutions dedicated to lung research in Germany. Using translational research methods, the DZL seeks to jointly develop new approaches for the prevention, diagnosis and therapy of serious lung diseases including asthma, chronic obstructive pulmonary disease (COPD), cystic fibrosis, diffuse parenchymal lung disease (DPLD), endstage lung disease, lung cancer, pneumonia and acute lung injury, and pulmonary hypertension.

Record attendance at the 11th Patient Forum "COPD" at DZL site Grosshansdorf

More than 150 participants attended the patient forum of the "Lung Information Service" and the "LungenClinic Grosshansdorf"...

Read more...

DZL Scientists honored at 56th DGP Congress in Berlin, German Federal Health Minister praised DZL and LIS

Read more...

Experts recommend screening programs for people at high risk for lung cancer

DZL investigator Prof. Hans-Ulrich Kauzcor first author of accompanying publication with recommendations for the policy

Read more...

New in PubMed
New This Week From DZL Faculty

Upcoming Events

25.06.2015
2015 TLRC Lung Conference, 4th DZL International Symposium, "Frontiers in Chronic and Malignant Airway Disease"

16.08.2015 - 22.08.2015
Gordon Research Conference on Lung Development, Injury and Repair

26.09.2015 - 30.09.2015
ERS Annual Congress - 2015

31.01.2016 - 03.02.2016
5th DZL Annual Meeting in Hannover

ERS Course: Interstitial Lung Diseases
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- There is an urgent need for rules, standards of conduct (DFG)
- These rules needs to be formalised (contract)
- Awareness and education (!)
- Leading by example and trusting each other
- Benefitting the community and the network
- Large networks are extremely prolific and should allow for generosity