

Strategic Vision for Pulmonary Research



Gail G. Weinmann, M.D.

Deputy Director

Division of Lung Diseases

National Heart, Lung, and Blood Institute

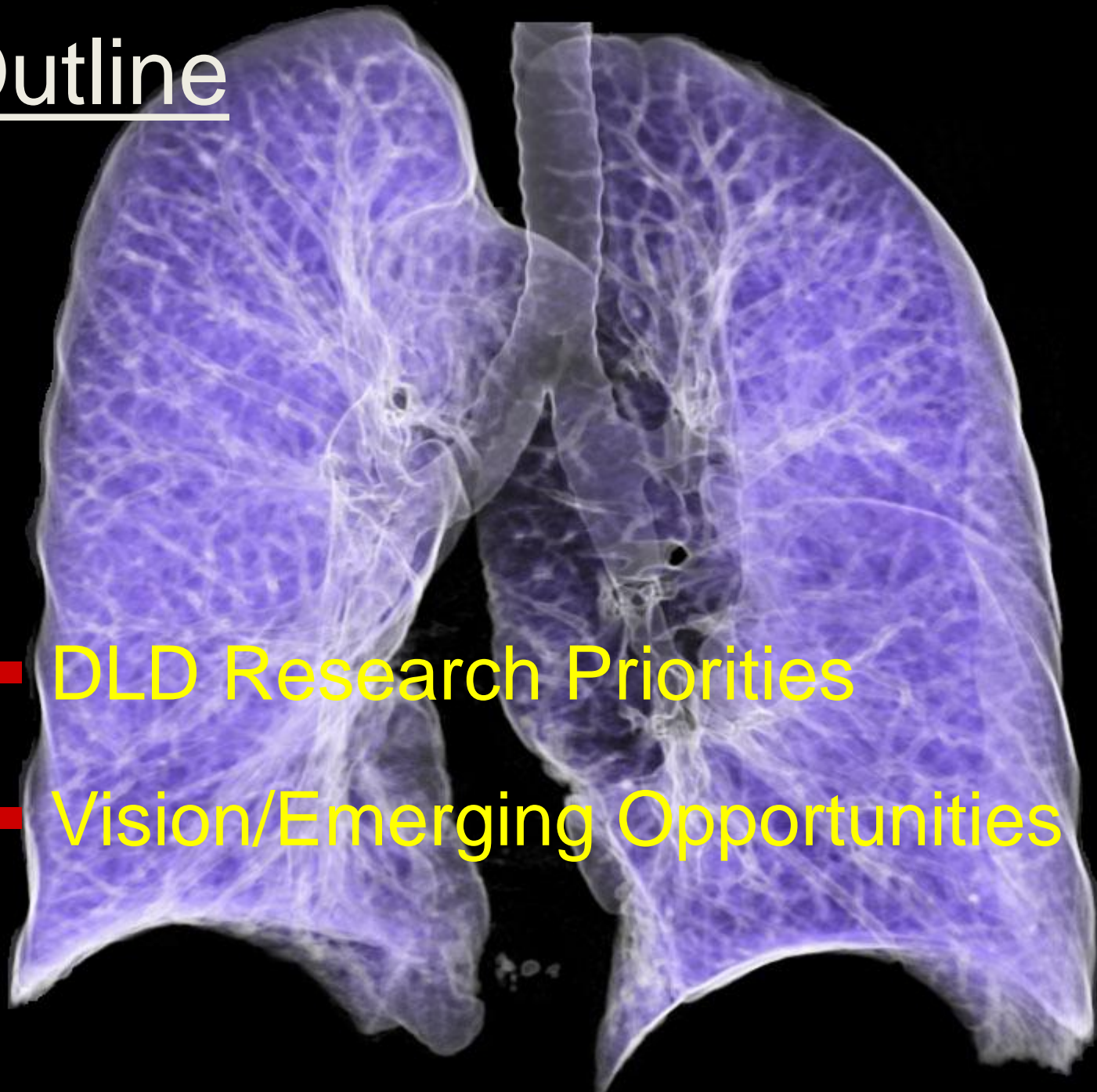
NHLBI Mid---Atlantic Innovation Conference

October 15, 2012

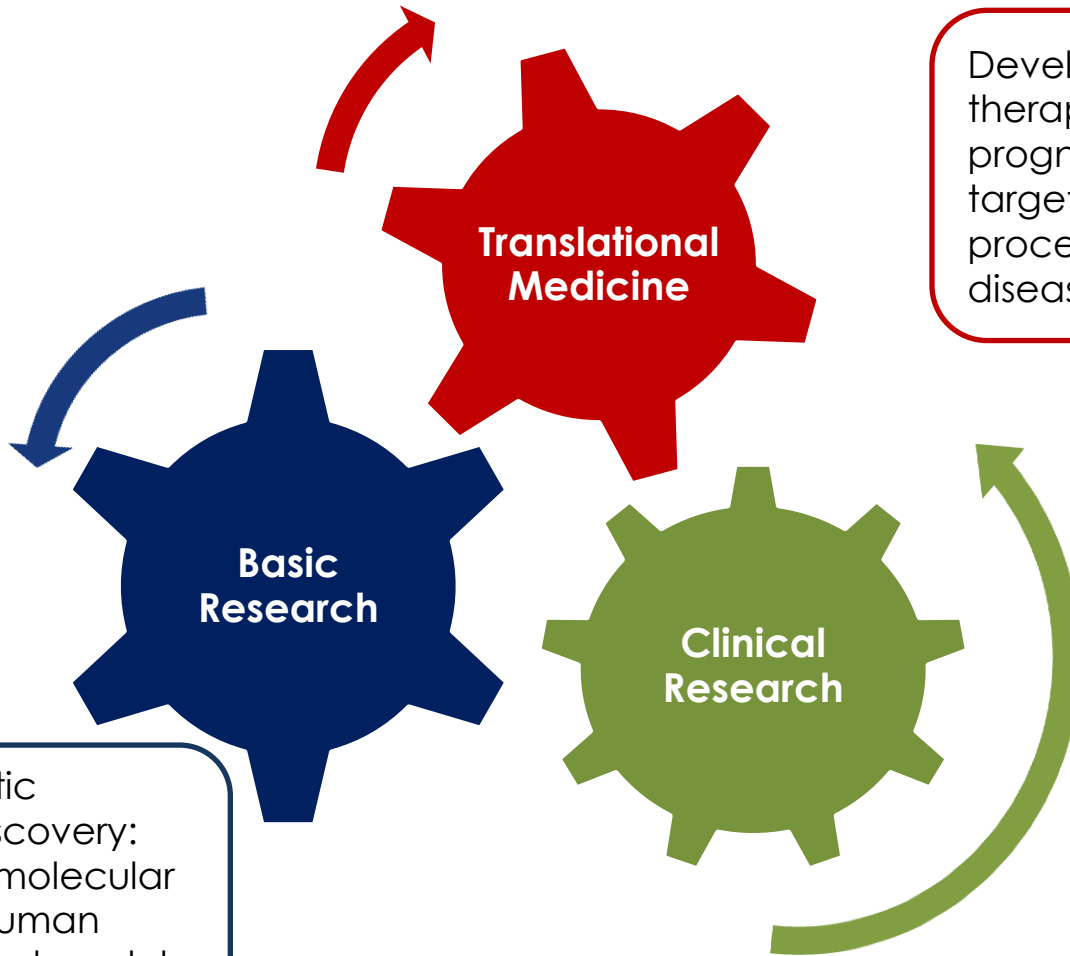


Outline

- DLD Research Priorities
- Vision/Emerging Opportunities



Coordinated Approach to Lung Research



Mechanistic studies/discovery: genetics, molecular biology, human tissue-based models of disease, etc.

Development of therapeutics, diagnostics, prognostics, to guide targeted interventional procedures for lung diseases

Patient-based: diagnostic tools, proof of concept trials, phenotyping, epidemiology, and pharmacology, translational II

Basic /Discovery Research

■ **Priorities**

- Identify origins/pre-clinical markers of lung disease susceptibility
- Improve phenotypic, molecular, and genomic characteristics
- Develop strategies for lung regeneration and repair
- Explore lung microbiome

■ **DLD Programs**

- Tissue Resources for Genomic Research in A1AT and Sarcoidosis, Lung Tissue Research Consortium, Pulmonary Vascular Diseases
- Lung Repair and Regeneration Consortium
- Severe Asthma Research Program
- Lung Microbiome

Lung Regeneration – Future Directions

- Tissue engineering to develop 3-D tissues
- Harnessing iPS/ES to facilitate regeneration and repair
- Imaging to elucidate lung regenerative capacity
- Microenvironmental cues for stem cell renewal



TIME magazine
Best inventions of 2010



Translational Research

- **Priorities**

- Validate diagnostic and therapeutic targets
- Phenotypes and surrogate outcomes for personalized treatments

- **DLD Programs**

- Prematurity and Respiratory Outcomes Program (PROP), and Sub-populations and Intermediate Outcome Measures in COPD Study (SPIROMICS)
- Centers for Advanced Diagnostics and Experimental Therapeutics in Lung Diseases (CADET), Translational Program Project (tPPG), and Science Moving Towards Research Translation and Therapy (SMARTT)
- Translational P01

Clinical Research

■ **Priorities**

- Test novel therapies
- Test management strategies
- Foster dissemination and adherence to evidence-based treatment strategies.

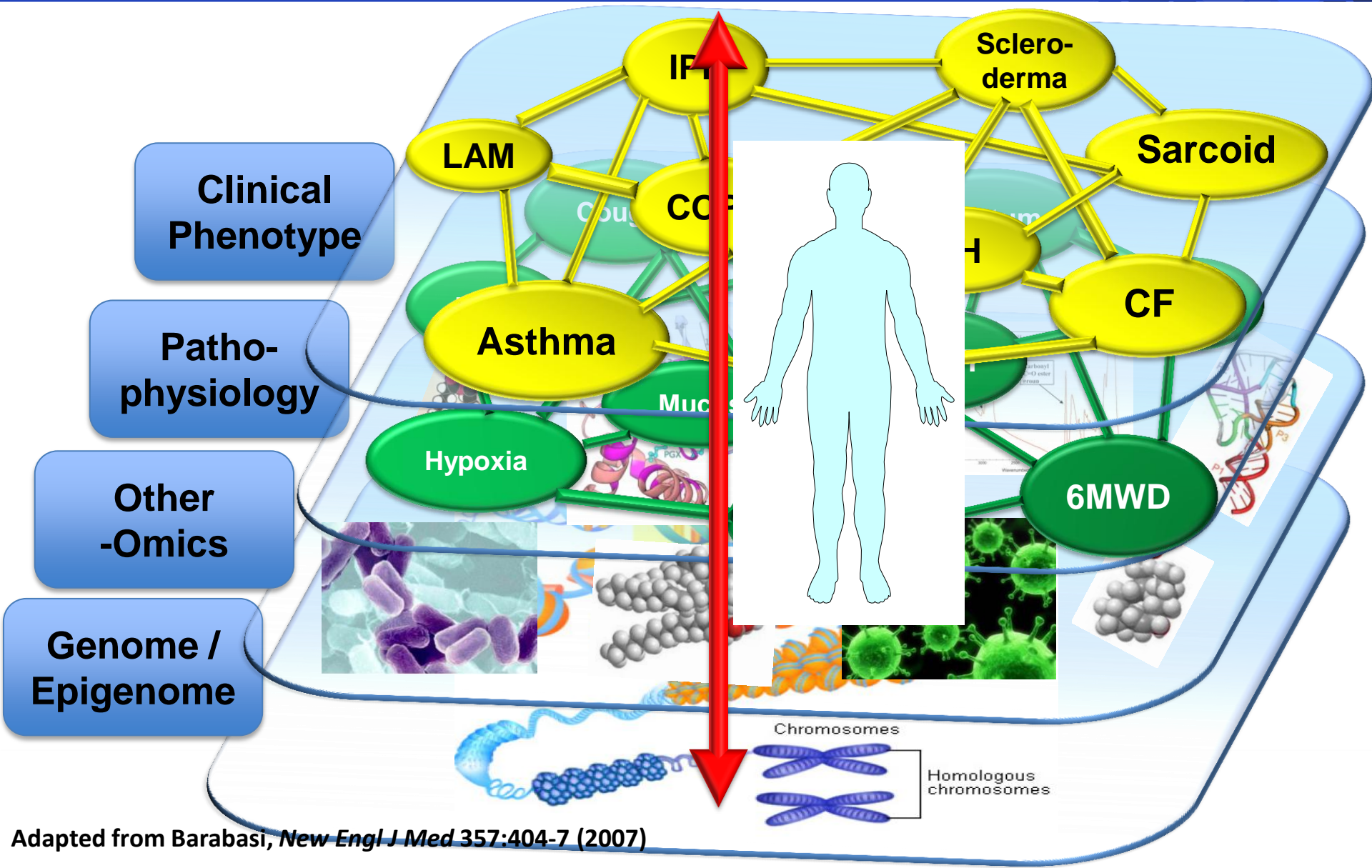
■ **DLD Programs**

- Phase II Clinical Trials of Novel Therapies for Lung Diseases
- Translational P01
- Networks and Clinical Trials
- National Asthma Education and Prevention Program and National Asthma Control Initiative
- COPD Learn More, Breathe Better Campaign

Emerging Directions in Lung Research

- Cell-based therapies
- Integrated omics
- Multi-dimensional imaging
- Multi-scale discovery for lung development
- Electronic health records for pulmonary vascular disease clinical trials

Integrated Approaches to Lung Diseases



Lung Specific Opportunities

PAR-12-1162 and PAR-12-1163



“Safe and Effective Instruments and Devices for Use in Neonatal and Pediatric Care Settings, SBIR/STTR [R43/R44] and [R41/R42]”