

# Innovator's Playbook: How to Find – and Fund – Innovative Respiratory Ideas. Incubator Approach.



# Coridea is an Established Incubator with long track record in cardiovascular disease



15

Years of Innovation

120+

Patents issued

12

Companies started

> \$8 million

NIH Grant awards

> \$100 million

Venture funding raised

> \$1 billion

Returned to investors



ARDIAN



evalue



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- Heart Failure / Transplant Cardiologist

**Mark Gelfand**

- Engineer and Physiologist

**Zoar Engelman, Ph.D.**

- Biomedical Engineer



Respicardia<sup>®</sup>  
Respiratory Rhythm Management™

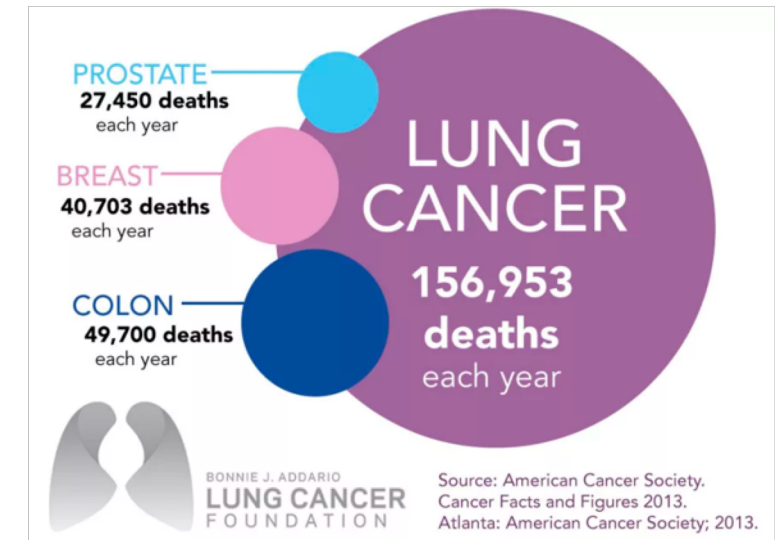
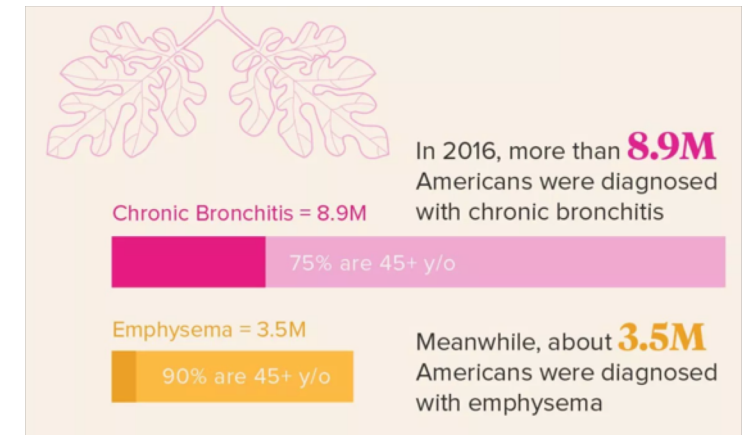
chf solutions<sup>®</sup>



# We decided to explore pulmonary in 2014. Incubated a few technologies and selected two for series A funding

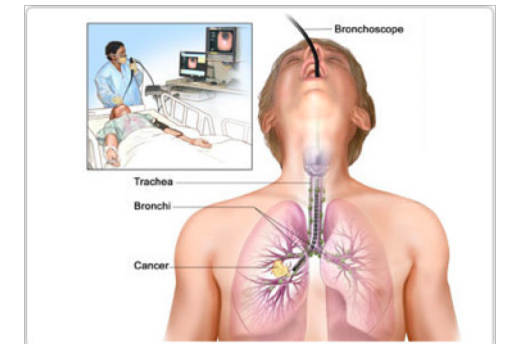
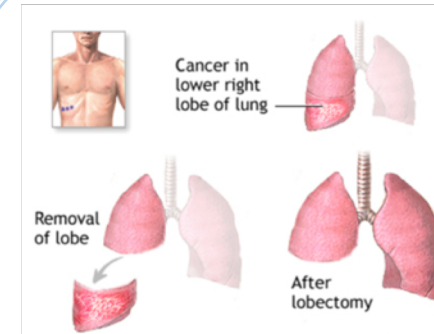
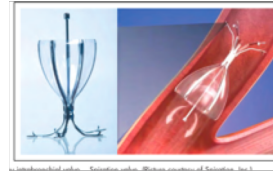


- **Why pulmonary?**
- Enormous disease burden in COPD and Lung Cancer (Looking for an unmet clinical need?)
- Large segments resistant to drug therapy
- On the strategic map of every major drug and device manufacturer
- Existing referral pathways to established interventional and surgical specialties
- Emerging “interventional” pulmonary specialty reminiscent of cardiology in 1980s



# Pulmonary is behind? Lung is a navigational and therapeutic challenge

- Adequate imaging and access are just becoming available
- Clinical pivot from diagnostic procedures to therapies
- Industry pivot from capital equipment to implants and disposable tools
- Natural transition from surgery to endoluminal intervention
- Opportunity for rapid migration of technology from other interventional fields





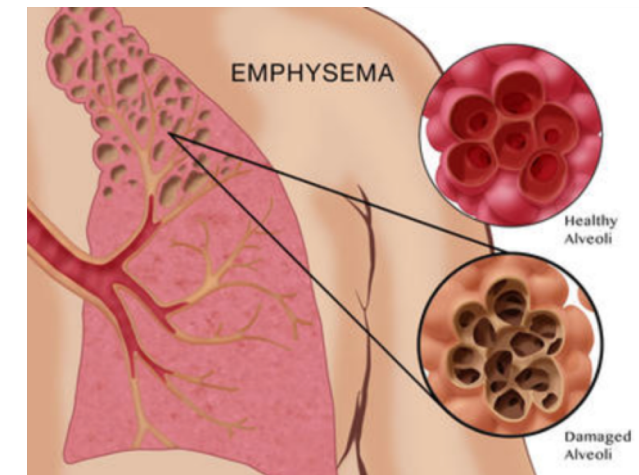
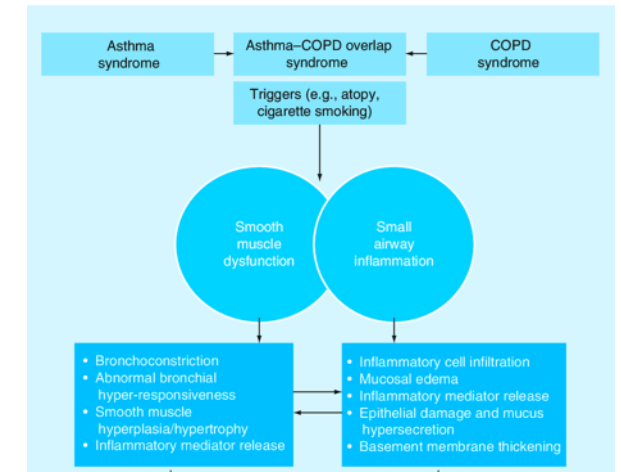
# How to choose therapeutic targets?

## Asthma and COPD

- Complex physiologic therapy pathways shared with drug therapies
- Large randomized clinical trials imply need for a lot of capital










## Emphysema

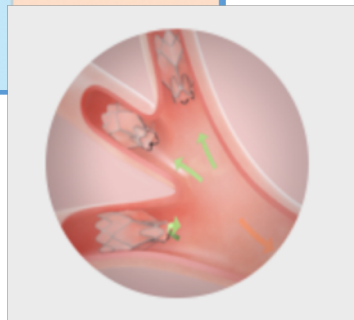
- Substantial subset of COPD diagnosed definitively by imaging rather than symptoms
- Structural disease! Devices don't need to compete with drugs (Think TAVR vs. RDN in cardiology)
- Physiologic mechanisms of “lung volume reduction” AND “airway bypass” proven by surgery
- Fits Coridea's skillset and access to funding
- Device opportunity at a reasonable investment?



# Practical approach to lung volume reduction



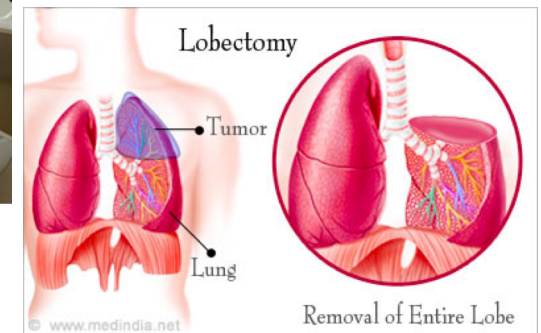
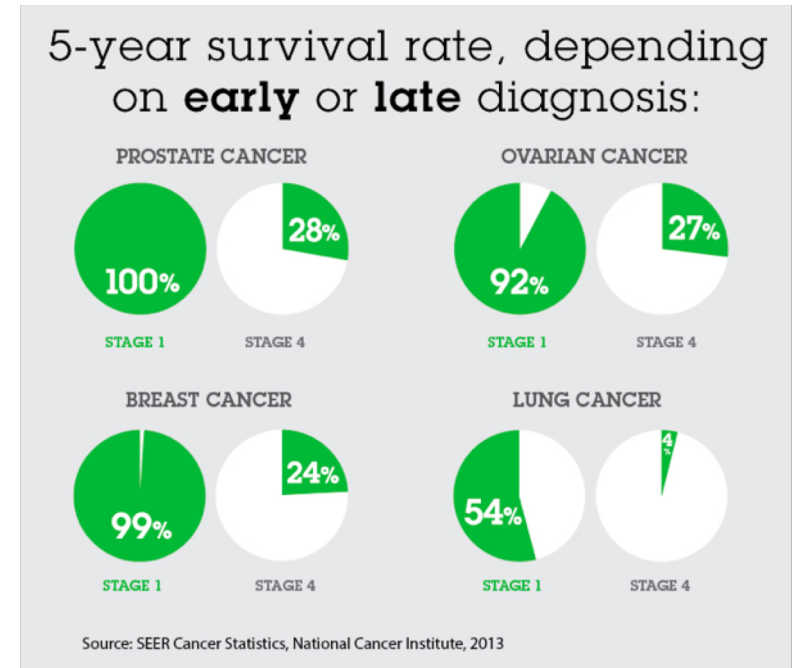
	Cost/Time 1 Valve	Anchors	Optimal Sealing	Accurate/ Controlled Release
<b>EOLO</b> 				
<b>OLYMPUS</b> 				
<b>pulmonX</b> 				



- Replacing 3-7 valves with one “lobar level” valve
- Proprietary sealing and retention mechanisms prevents leaks and migration
- Proprietary delivery system allows greatly simplified use and accurate controlled release
- Pipeline products to close incomplete fissures and reduce pneumothorax

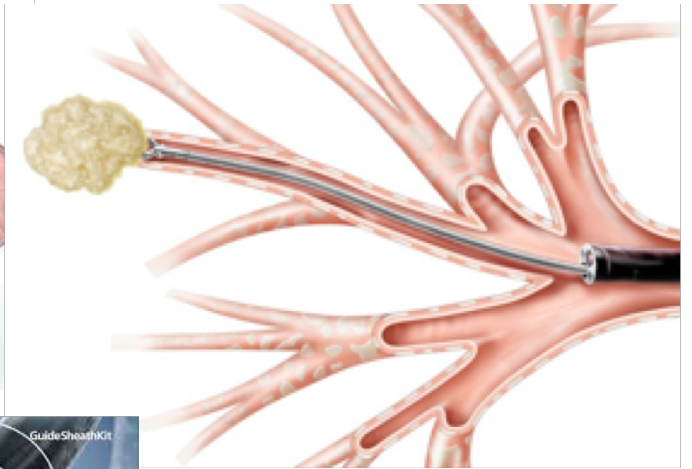
# Lung Cancer: It is all about early detection and less invasive treatment

- Surgery is effective but old age and comorbidities severely reduce eligibility and complicate recovery
- SBRT (focused beam radiation) is limited by dose
- Logical pathway: thoracotomy to VATS to endoluminal less invasive endoscopy



# Device opportunity landscape is changing

- Device targets yesterday were imaging and lymphatic node sampling
- Device target today is biopsy of peripheral nodules and fiducials
- Device targets tomorrow are **post-biopsy therapies**:
  - Ablation
  - Local drug delivery



**OLYMPUS**



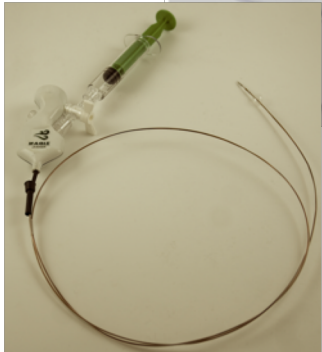
*Johnson & Johnson*  
**AURIS**

**INTUITIVE**  
NeuWave Medical®  
Intelligent Ablation

**Medtronic**



# Endobronchial Ablation of Peripheral Nodules is The “Holy Grail” of flexible endoscopy



- Robotic and traditional bronchoscopy companies made commitment to pursue biopsy and ablation in one session
- Technology of choice is microwave ablation. Microwave antenna has intrinsic problems meeting goals of navigating to peripheral tumors
- Our technology was developed specifically for the lung and superior usability and performance:
  1. Smaller profiles to 1.5 mm
  2. Better flexibility and turn radius
  3. Precisely Controlled Lesion Sizes 1 to 4 cm
  4. Compatible with thinnest and most flexible bronchoscope, robotic and traditional exchangeable with radial EBUS,
- “Ablate and resect” FIH studies planned for early 2020 allow definitive proof of efficacy through the pathology analysis without long follow-up
- Opportunity for early partnering or acquisition