



## **Agenda Item 2**

# **New Initiatives and Start-Up Deals through UM Ventures**



**BOARD OF REGENTS**

SUMMARY OF ITEM FOR ACTION  
**INFORMATION** OR DISCUSSION

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**TOPIC:** New Initiatives and Start-Up Deals through UM Ventures (information item)

**COMMITTEE:** Economic Development and Technology Commercialization

**DATE OF COMMITTEE MEETING:** March 12, 2015

**SUMMARY:** The Committee will be briefed on new initiatives and start-up deals through UM Ventures. UM Ventures has seen a strong increase in technology transfer results in FY 2014. Invention disclosures grew by 39% to 366; licenses executed grew by 24% to 51; and licensing revenues grew by 33% to \$2.3 million.

**ALTERNATIVE(S):** This item is for information purposes.

**FISCAL IMPACT:** This item is for information purposes.

**CHANCELLOR'S RECOMMENDATION:** This item is for information purposes.

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COMMITTEE RECOMMENDATION:

DATE:

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BOARD ACTION:

DATE:

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SUBMITTED BY: Joseph F. Vivona (301) 445-2783

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# New Initiatives and Start-Up Deals Through UM Ventures

March 12, 2015

Phil Robilotto

UM Ventures

- UM Ventures Baltimore
- Recent UMB Start Up Highlights
  - New Startup Initiative

# UM Ventures Baltimore

*protecting and commercializing UMB Intellectual Property*

## Intellectual Property

### ➤ Disclosures

IP Attorneys  
 3 PhD/JD (Molecular  
 Bio/Biochem/Physics)

Intake/Reporting/  
 Accounting Functions

## Licensing

### ➤ Licenses

Licensing Team One  
 Software, Medical Devices,  
 Antibodies, Research Tools

Licensing Team Two  
 Therapeutics, Vaccines,  
 Diagnostics Chemistry

## Ventures

### ➤ Start-ups

*Director New Ventures*  
**Rana Quraishi**

*Ventures Analyst*  
**Mark Lafferty**

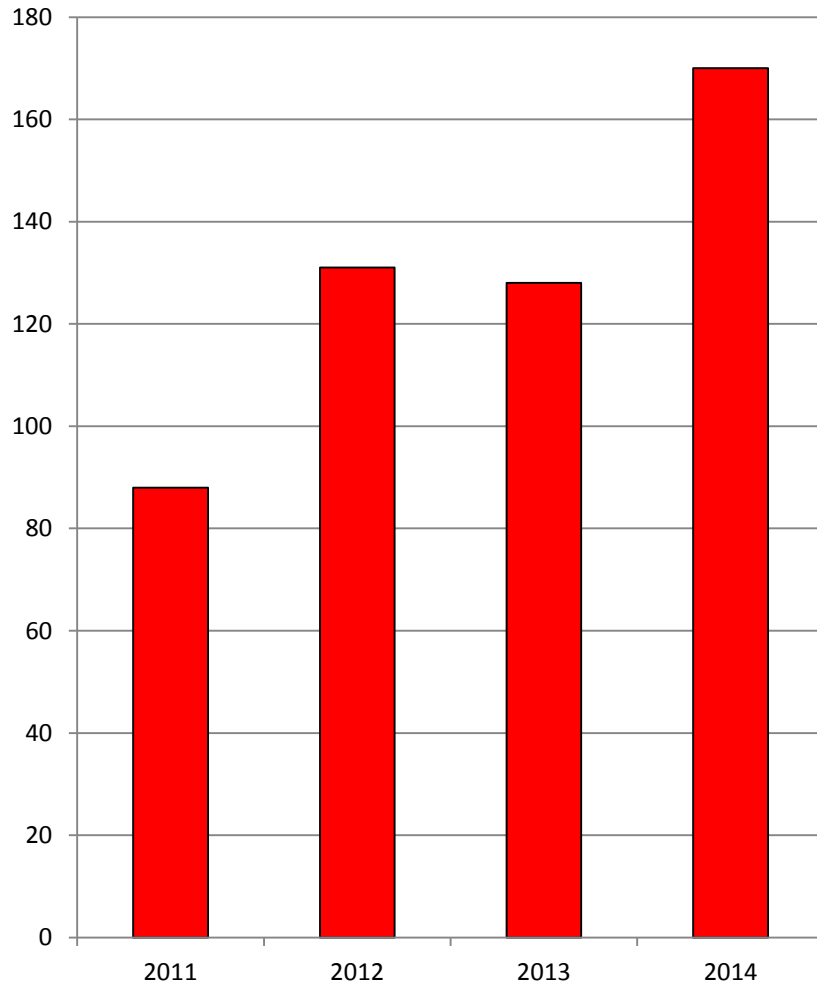
**Medical Device/Dx**  
 Entrepreneur-In-Residence  
 (Exxon/Vapotherm/VIC)

**Therapeutics/Biosimilars**  
 Entrepreneur-In-Residence  
 (JHU/Nora Therapeutics)

**Finance/Valuation**  
 Consultant  
 (DuPont/Wyeth/Pfizer)

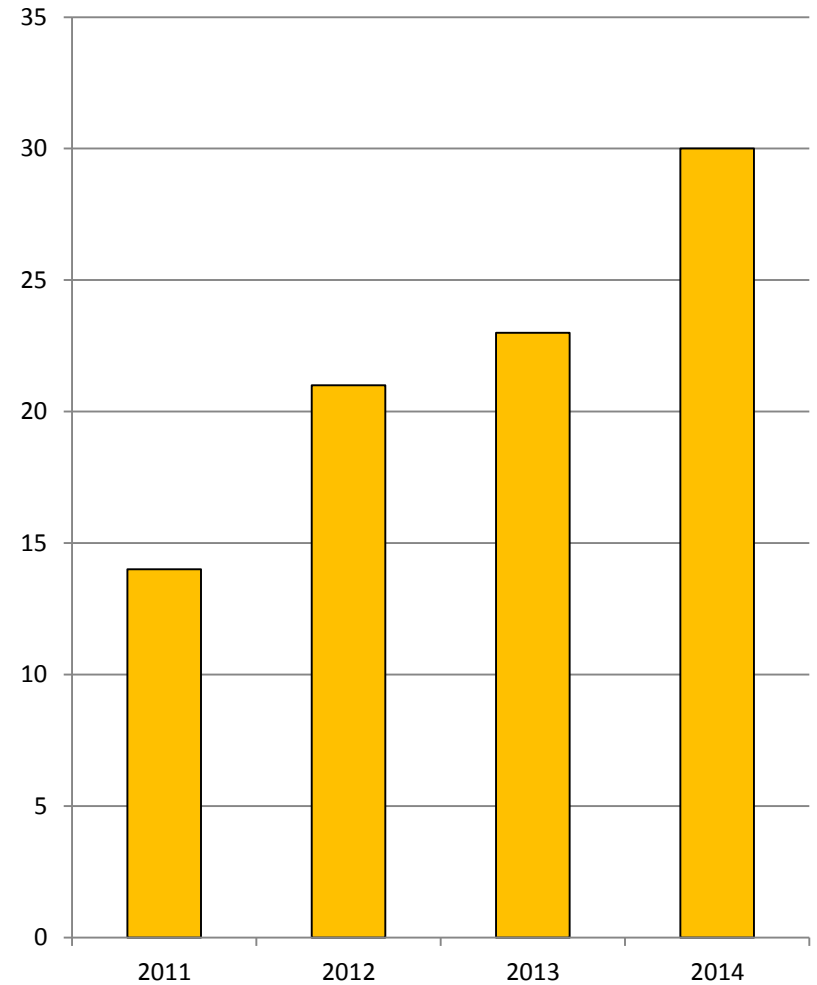
**Therapeutics/Vaccines**  
 Entrepreneur-In-Residence  
 (Merck/Novavax/Takeda)

## Disclosures



**93% increase in three years**

## Licenses



**114% increase in three years**

## Intellectual Property

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## Licensing

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## Ventures

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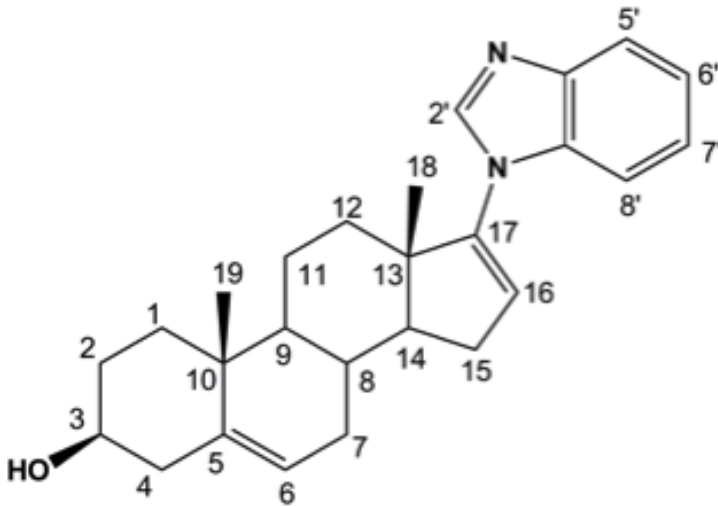
2014: Positive Phase II results  
2014: \$98 million IPO

In 2014, approximately 233,000 new cases of prostate cancer, with 29,000 deaths in US.

### **Tokai Solution:**

Galeterone, an oral drug candidate to treat prostate cancer resistant to other treatments

UMB Inventors: Angela Brodie, PhD, and Vincent Njar, PhD, SOM, Pharmacology

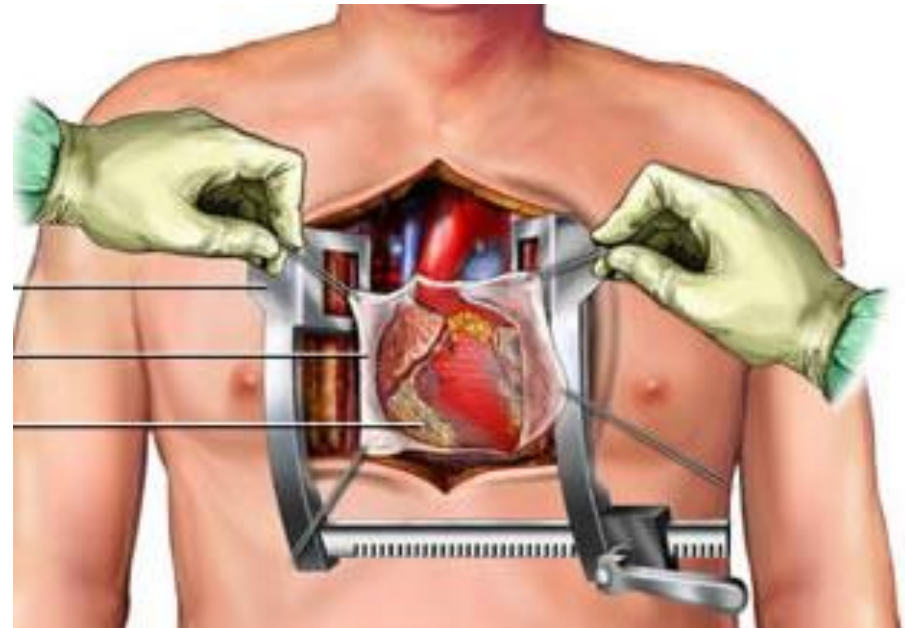


Galeterone molecular structure

## 6.8 Million suffer from **Mitral Valve Regurgitation** in U.S.

**Challenge:** Current treatment requires open heart surgery

- Large 6-8" incision
- Sternotomy
- Heart bypass
- Arrested heart
- 1-2% stroke risk
- 3-6 hour procedure
- 4-7 day hospital recovery
- Return to work > 1 month



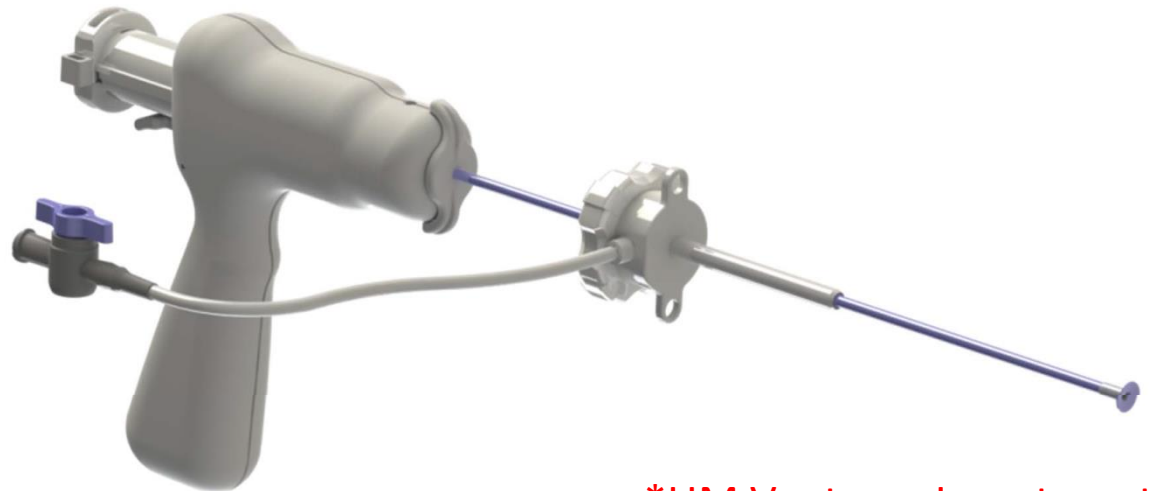
- Over 100,000 MV operations per year
- Only 20% of patients who could benefit get open heart surgery



## Harpoon Solution: Minimally invasive surgery device

- 1-2" incision
- No sternotomy. No bypass.
- Beating heart
- Negligible stroke risk
- 45-60 minute procedure
- 1-2 day hospital recovery
- Return to work in 5-7 days

2014: Raised \$3.6 Million\*  
2015: Clinical Trial



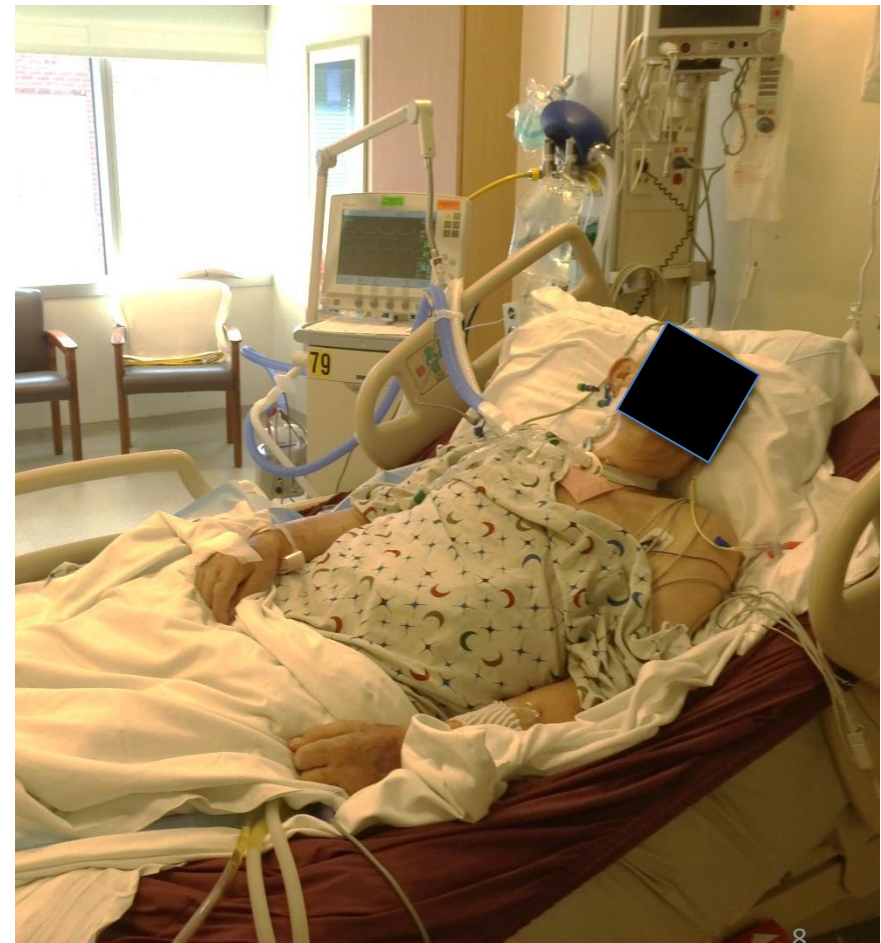
UMB Inventor:  
James Gammie, MD  
SOM, Surgery

\*UM Ventures Investment

## 235,000 Non-Cancer **Lung Deaths** in the U.S. per year

**Challenge:** Current Treatment requires Mechanical Ventilator & Wind Pipe Tube

- ICU & bed restrained
- High failure to wean
- Injurious to lung
- Prone to infection
- Poor survival
- **EXPENSIVE: \$10,000/day**



2014: Licensed technology  
2014: Founded in Baltimore  
2015: Raising Funding\*

## Breethg Solution: Artificial Lung

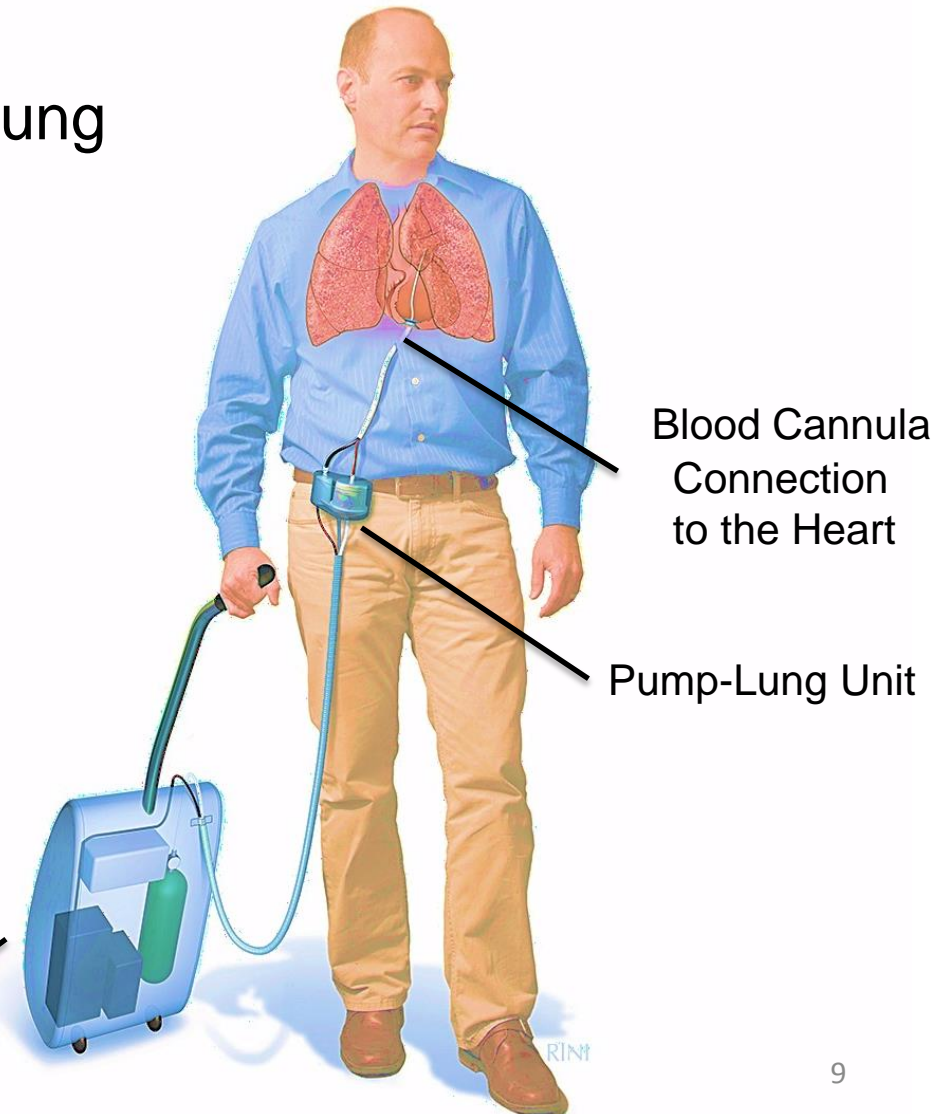
- For temporary or permanent use
- Wearable, Portable
- Reduced risk of blood clotting
- Eliminates large doses of blood thinners
- Reduced risk of bleeding
- Reduced Cost

### UMB Inventors

Bartley Griffith, MD and  
John Woo, PhD, SOM, Surgery

\*UM Ventures Investment

Batteries  
O<sub>2</sub> Source  
Pump Motor/Controller



2014: AuntMinnie.com Best New Vendor in Radiology  
2015: JHU License



## Challenge:

Clinical departments face:

- Information overload
- Multiple IT Systems.
- Cost pressures
- Home-grown solutions are proliferating, but not efficient

## AI Solution:

- Aggregates data from array of IT Systems
- Consortium of leading health centers
- App Store

UMB Inventor: Chris Meenan, SOM,  
Diagnostic Radiology

Biochemistry

Biomedical Engineering

**Banking/Finance\***

**Corporate/Business Development\***

Chemistry

Chemical Engineering

Immunology/Molecular Biology

**Management/Operations \***

Medicine

Molecular Genetics

Microbiology

Neuroscience

Physiology

<u>StartUp Candidate</u>	<u>Conflict of Interest</u> PI Incentive/Engagement	<u>Early Leadership</u> Management	<u>Access To Funding</u> Bus. Dev.
Vaccine (Infectious Disease)	X	X	
Antibody Glycosylation Platform	X		X
Medical Device (Laparoscopic Surgery)	X	X	X
Breast Cancer Oral Therapeutic	X	X	X
Infectious Disease Diagnostic Platform	X		
Alzheimers Disease Antibody		X	X
Pain Oral Therapeutic	X	X	X

*X = StartUp Need*

2014 - Equity Investment Policy Critical to Support of High Profile UMB Startups

**2015 – Proposal forthcoming to develop Affiliated Entity established by University/UM Ventures to support early UMB StartUps with initial MGMT/BD team**