



Agenda Item 3

Discovery to Product Accelerator



BOARD OF REGENTS

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

TOPIC: Discovery to Product Accelerator (information item)

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: September 10, 2015

SUMMARY: The Committee will be briefed on a new Discovery to Product Accelerator initiative at UMB.

New Ventures Accelerator Initiative

UMB OTT is initiating a program to help accelerate promising, but early stage UMB technologies through the commercialization process. Modeled on UPenn's highly successful UPStart program, and not dissimilar to UMCP's own Venture Accelerator, the UMB accelerator program will utilize UMB's internal New Ventures Team (NVT) within OTT to initiate new UMB startup companies around high commercial potential technologies. These startup companies will all be based on UMB IP and will focus primarily on therapeutic/diagnostic technologies. The NVT, with guidance from an experienced external Advisory Panel, will form the NewCo, develop and execute on an initial business plan, obtain funding, and seek long term executive management over the course of an agreed to 18-24 month timeline. UMB will receive an initial equity position in these startups and will look to exit through an acquisition/IPO, a major pharma or biotech alliance, or recruitment of a long term management team/capital investment.

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.

COMMITTEE RECOMMENDATION:

DATE:

BOARD ACTION:

DATE:

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

Discovery To Product Accelerator

UM Ventures Baltimore

September 10, 2015

Phil Robilotto

UMB New Ventures Startup Initiative

UM Ventures Baltimore

Initial Focus 2012 -2014:

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

New Ventures

➤ *Start-ups*

Director New Ventures
Rana Quraishi

Venture Associate
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)

UM Ventures Baltimore

New Ventures Group Formed 2014:

Intellectual Property

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Rana Quraishi

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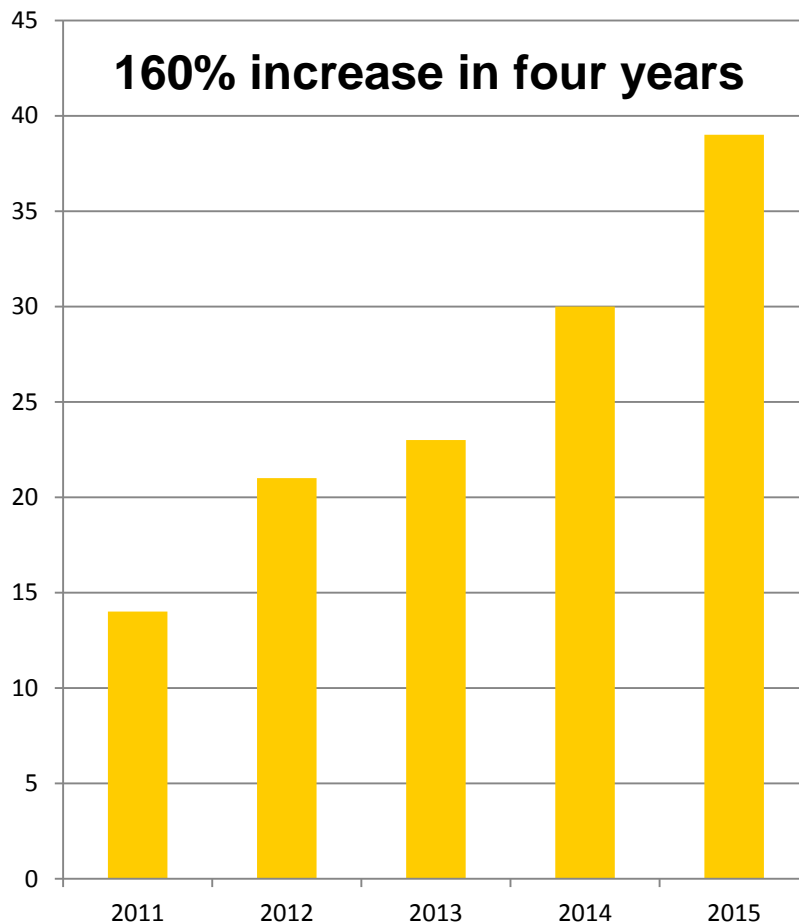
Medical Device/Dx
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Therapeutics/Biosimilars
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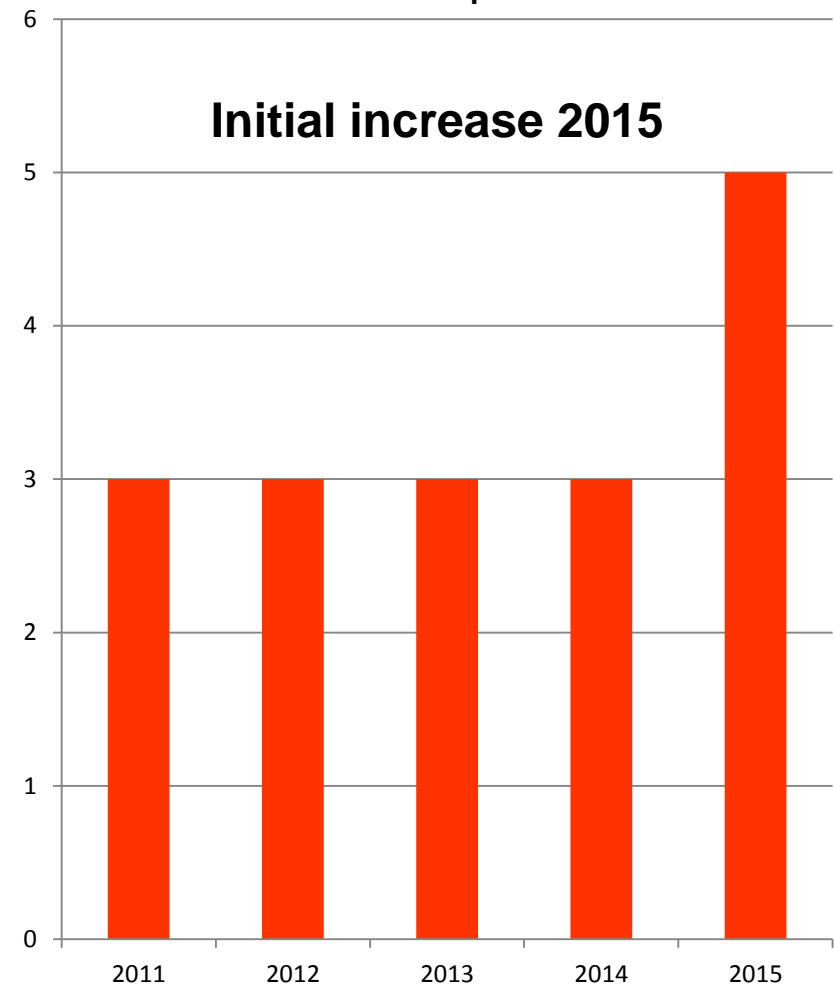
Finance/Valuation
 Consultant
 (DuPont/Wyeth/Pfizer)

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

Licenses



Startups



Anticipate NV Startup Initiative to drive significant UMB startup growth

Rationale for NV Startup Initiative

New Personnel and Policies

UM VENTURES BALTIMORE

Biochemistry

Biomedical Engineering

Banking/Finance/Capital Raise*

Corporate/Business Development*

Chemistry

Chemical Engineering

Immunology/Molecular Biology

Management/Operations*

Medicine

Molecular Genetics

Microbiology

Neuroscience

Physics

Physiology

** New Ventures Group*

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

2015 – NV Startup Initiative

UMB Startup Bottleneck (March 2015)

NV Startup Initiative Impact

<u>StartUp Candidate</u>	<u>Conflict of Interest</u>	<u>Early Leadership</u>	<u>Access To Funding</u>
	UMB PI	Management	Bus. Dev.
Antibody Glycosylation Platform	X	X	X
Vaccine (Infectious Disease)	X		X
Medical Device (Laposcopic Surgery)	X	X	X
Breast Cancer Oral Therapeutic		X	X
Cancer Immunotherapy Platform	X	X	X
Alzheimers Disease Antibody		X	X
Dental Restoration Technology	X	X	X

Ensure High Quality UMB Startups

X = StartUp Need

➤ Tech Transfer Task Force (HETTTF)

➤ New Ventures Team

Discovery to Product Accelerator

New Ventures Initiative (NVI) Startup Path

New Ventures Team (NVT)

- Phil Robilotto (UMB Rep)
- Rana Quraishi
- Mark Lafferty

Entrepreneur Pool

New Ventures Advisory Panel (NVAP)

- CEO Rx
- CSO RX
- Founder Med Device
- COO Vaccine
- Angel/Mgmt
- CEO Rx/Dx Services
- Corp Ventures
- Venture Fund X1



Discovery Stage Company

(4-6 separate entities
in active portfolio)

Standard Agreement

- 18-24 month go/no-go diligence milestone
- NVT business/project plan
- Set cap table
- UM Ventures Seed \$

Company Structure

- NVT management
- UMB PI
- UMB Rep on BOD
- 1-3 external board members

Development Stage Company

UMB Equity

Therapeutic

Services

Therapeutic

Diagnostics

Therapeutic

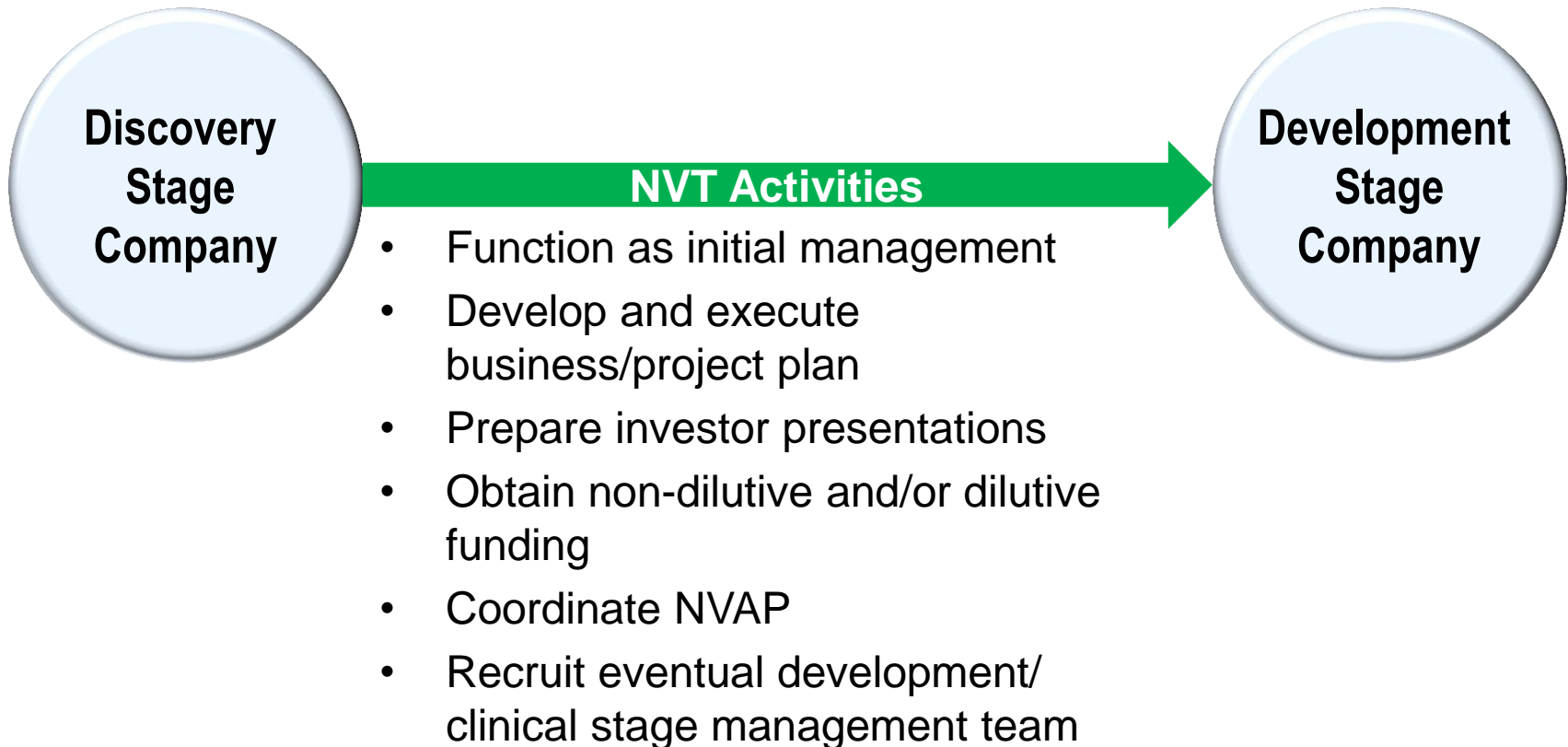
Med Device

Patent Clock Management

Increased Exit Value

Discovery to Product Accelerator

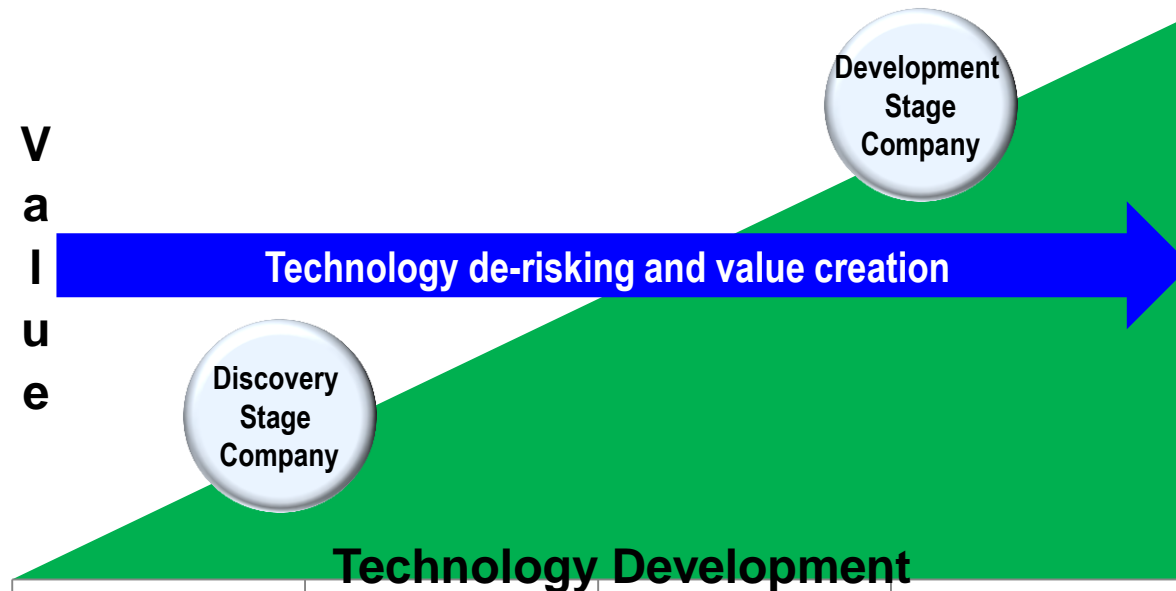
NVT Activities



**Directly increasing the success rate of startups
founded on UMB technologies**

Create and Retain More Value

NVI Startup Exits






- Revert to UMB
 - Business plan extension
- License to new management team
 - Acquisition of NVI Startup
- Initial public offering of NVI Startup

Potential exits

....all add value

UMB NV Startup Initiative Fall 2015

Initial Candidates Identified

<u>StartUp Candidate</u>	<u>Conflict of Interest</u>	<u>Early Leadership</u>	<u>Access To Funding</u>
	UMB PI	Management	Bus. Dev.
Antibody Glycosylation Platform	X	X	X
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Alzheimers Disease Antibody		X	X
 Dental Restoration Technology	X	X	X



Fall 2015

X = StartUp Need

UM Ventures

In FY15, UM Ventures continued to rapidly grow tech transfer at UMB and UMCP:

Metric	FY15 Total	1-Year Growth	4-Year Growth
License Agreements	56	10%	100%
Start-ups based on UM Intellectual Property	10	25%	100%
Licensing Revenue	\$3.1 million	8%	72%

UM Ventures licensees had significant successes in FY15:

- **Analytical Informatics**, health informatics start-up completed strategic partnerships with Toshiba, Johns Hopkins, and the Department of Health and Mental Hygiene.
- **Breethe** is developing a portable, artificial lung. Breethe raised \$1.7 million, including a \$100,000 investment from UM Ventures.
- **FlexEI**, a custom battery solutions company, announced that it is leasing 10,000 square feet of design and manufacturing space in College Park. FlexEI is on track to add 50 jobs within five years.
- **Gliknik**, a drug development company, received Orphan Drug status from the FDA for a therapeutic candidate to treat autoimmune diseases that it has licensed to Pfizer.
- **Harpoon Medical** is commercializing a surgical device for beating heart mitral valve repair raised \$3.75 million, including \$100,000 investment from UM Ventures. Harpoon began clinical trials in Europe in early 2015 and has successfully treated five patients.
- **Profectus Biosciences** raised \$50 million in 2014 to develop its Ebola Vaccine candidate and it is moving forward with clinical trials.
- **Remedium** (joint UMCP/UMB) First technology to achieve FDA regulatory approval for a UMCP-invented device. The device stops severe bleeding instantly. Two to three additional devices are in the pipeline.
- **Remedy Pharmaceuticals** announced in FY16 positive Phase II Clinical Trial Results of its drug candidate to treat stroke and launched a national multi-center trial to treat spinal cord injuries.
- **Tokai Pharmaceuticals** raised \$97 million through an initial public offering in October 2014 and began Phase III clinical trials to treat prostate cancer in June 2015.
- **VisiSonics** licensed its technology for 3D sound to Oculus, a company co-founded by a UMCP alum and acquired by Facebook for \$2 billion. VisiSonics has also licensed the technology to Tesla and SpaceX. UM Ventures loaned Visisonics \$50,000 in FY15.

In addition, UM Ventures helped to create another 100 companies throughout the State through its business assistance services, particularly Mtech, the Small Business Development Center, and the Dingman Center. Programs serving small businesses include:

- **I-CORPS**, a federally funded (\$3.75 million) competitive grant won by UMCP assisted over 100 teams of faculty and students to bring their discoveries to market. Approximately one-third of

the teams are in the Mid-Atlantic Region, an additional one-third of the teams are affiliated with NIH in Maryland, and one-third of the teams are located outside the region.

- **Dingman Center Angels** – considers pitches from over 100 companies and invest over \$1 million per year.

UM Ventures also works extensively with established companies, including:

- **MedImmune** – five teams, two each from UMB and UMCP and one from UMBC, began work on highly focused translational research funded by MedImmune. Total funding is approximately \$1 million per year.
- **Redox** – (UMCP TAP incubator resident) expanded to 12 full-time employees. MD Incubator Company of the Year – Green Category, \$9+MM in federal grant monies within the last 18 months. Strategic relationship with Microsoft and a confidential national energy utility company.
- **Paragon Bioservices** (UMB BioPark tenant) – based in part on collaborations with UMB faculty, Paragon expanded to 120 employees

Student entrepreneurs are also assisted by UM Ventures:

- **Bioengineering Capstone Program** - Senior BioE students are teamed with faculty from the School of Medicine to create their own engineering designs from concept to product. In FY15, 91 students comprising 18 teams developed potential medical devices.
- Over 200 students were assisted by the Dingman Center and Mtech in developing business plans for their own start-up companies.