

SOFTWARE COMMERCIALIZATION

NATIONAL ACADEMIES

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Associate Director Licensing - Tech Transfer

March 2, 2020

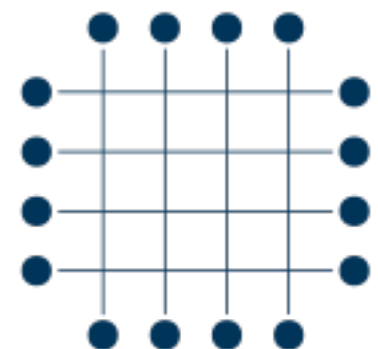
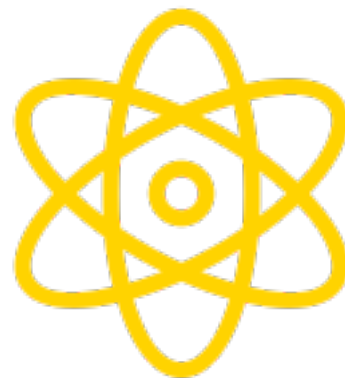
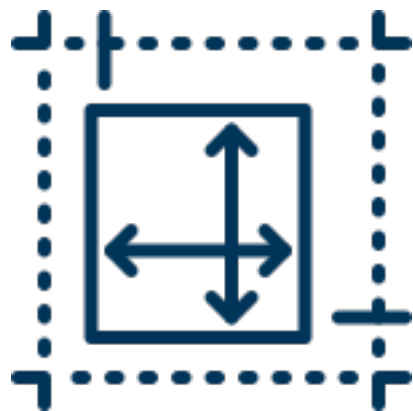
AGENDA

- UM Tech. Transfer Overview
- Value Drivers
- New Era, New Opportunities
- Case Approaches Examples
- Summary



UM RESEARCH

- \$1.62 Billion Research Spending (2019)
- #1 in research volume among U.S. public universities, according to the National Science Foundation
- 2.8 M square feet of lab space for research and teaching



FY 2019 IN REVIEW

502

INVENTION
REPORTS

198

PATENTS
ISSUED

232

LICENSE/OPTION
AGREEMENTS

22

NEW BUSINESS
STARTUPS

\$16.3

MILLION
IN REVENUE

2,000⁺

JOBS CREATED
SINCE 2000

DIGITAL VALUE DRIVERS

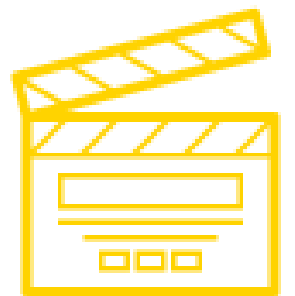
- Project History
- Focal Point
- Problem Complexity
- Expertise and Know-How
- Raw Innovation



NEW OPPORTUNITIES

State of Technology and Support:

- Data
- Benchmarking
- Deep Learning, Artificial Intelligence and Machine Learning
- Open Source/Open Access
- Start-Up Interest & Momentum
- Funding Support
- Formal IP Protection vs. Open Innovation



TRADITIONAL APPROCHES

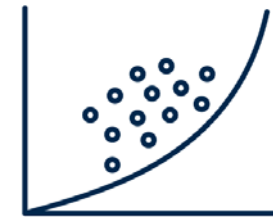
- Direct User Licensing
- Partner Licensing
- Service Based Deployment - SAAS
- Professional Services and Support
- Brand Support



AI/ML: CASE EXAMPLE

Advanced Medical Image Analytics

- *Technology:* Artificial Intelligence/Machine Learning Image Analysis
- *Focus Areas:* IBD/Chron's Disease
- *Key Issue:* Objective Assessment, Repeatability
- *Other:* Pace/Lack of Innovation



Critical Issues:

- Rapidly Evolving Technology/Science
- Regulatory Pathway and Certification
- Independent Assessment Options
- Evolving Therapeutic Landscape



AI/ML: CASE EXAMPLE

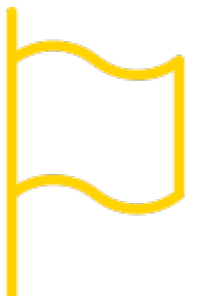
Hybrid Solution Approach

Commercial Partner:

- Type: Exclusive vs. Non-Exclusive
- Focus: Transactional Application & Clinical Tracking
- Regulatory: FDA Clearance
- Market Development: Education and Acceptance
- Sales: “Feet on the Street”

Research Partners:

- Trials
- Benchmarking
- Model Weights, Parameters and Tuning



DUAL SOURCE AI/ML: CASE EXAMPLE

Component Based Approach

Commercial Partner:

- Service: Technical and Help Desk/Support
- Customization: Professional Development
- Hosted Solution: Transactional Support
- Local Solution: Commercial Application

Research Partners:

- Research Trials
- Benchmarking
- Model Weights, Parameters and Tuning



DATA: CASE EXAMPLE

Unique Data Sets and Analytics

Commercial Partner:

- Service: Technical and Help Desk/Support
- Analytics: Professional Report Development
- Hosted Solution: Service Based Access

Research Partners:

- Research Service and Expertise
- Curation and Development
- Development and Benchmarking



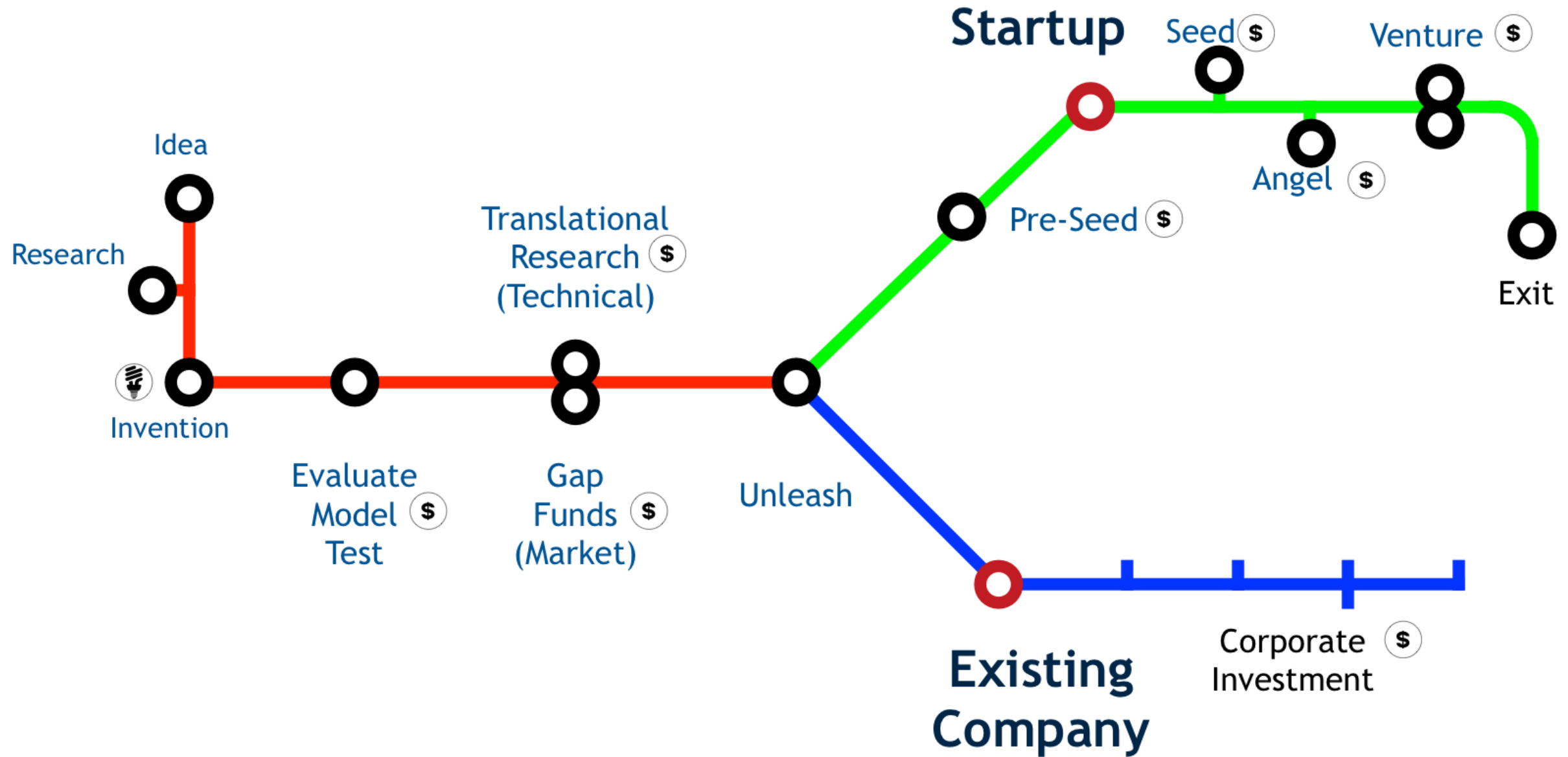
START-UP SUPPORT: CASE EXAMPLE

Start-Up Support

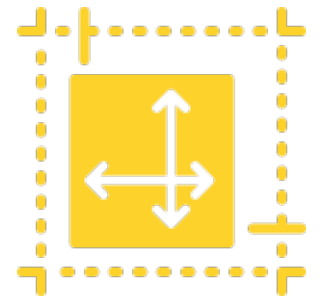
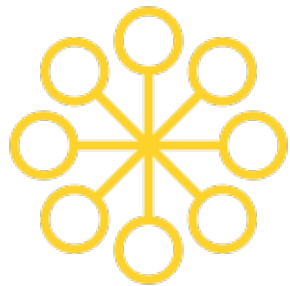
- Focal Point: Ecosystem Development
- Key Needs: Entrepreneurial Skills, Abilities & Network Resources
- Prime Resources: Human Resources & Funding
- License Type: Equity Only



FUNDING NAVIGATION: CASE EXAMPLE



SUMMARY: UNIQUE UNIVERSITY VALUE



- Collaboration
- Know How/Expertise
- Environment and Risk Profile
- Workflow
- Experimental Foundation



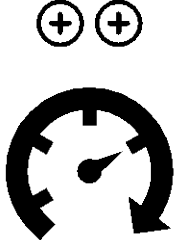
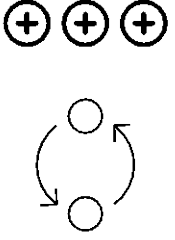




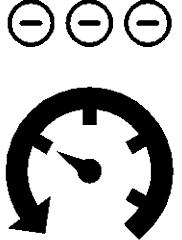
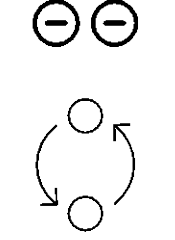




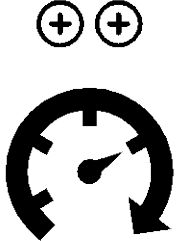
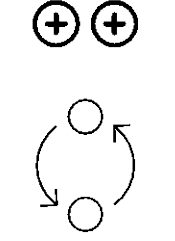





UNIVERSITY* IP VS. COMMERCIAL

Dimension	University	Commercial
Code	▪ Working Prototype/Advanced Prototype	▪ General Release
Environment	▪ Mat Lab, R, SAS, Tensor Flow	▪ Python, JAVA, C++
QA/Scalability	▪ Testing is the experiment/research	▪ Dedicated QA and Process
Code Management	▪ Google Drive, Local, Github	▪ GitHub, SVN
Documentation	▪ Papers & Know How	▪ User Guide/Inline
Validation	▪ Bench Test	▪ Beta Test

* Generally - There are always unique cases!

TRADITIONAL IP & Software

ADVANTAGES & DISADVANTAGES

 Copyright						
						
						
 Patent <ul style="list-style-type: none">- Utility- Plant- Design						
 Trade Secret						
	Defense	Time to Coverage	Supports Changes	Open	Publishing	Platform

We are inspired

To redefine how world-class university research can fuel a region and solve the world's great challenges.



Q & A

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Licensing

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