



**Board of Regents  
Committee on Economic Development and Technology Commercialization**

**January 31, 2019  
Towson University  
Field House – Johnny Unitas Stadium, Minnegan Room**

Public Session Agenda

- (1) **Featured Start-Up: InferCabulary** – Beth Lawrence, CEO & Co-Founder (Information Item)
- (2) **Towson University Economic, Innovation and Entrepreneurship Development** – Daraius Irani, PhD, Vice President Strategic Partnerships and Applied Research (Information Item)
- (3) **USM Office of Economic Development Update** – Tom Sadowski, Vice Chancellor for Economic Development (Information Item)
  - a. Momentum Fund
  - b. Maryland Technology Infrastructure Fund (formerly Excel MD)
  - c. Governor’s Opportunity Zone Task Force
  - d. College Park Opportunity Zones
  - e. Regional Institutional Strategic Enterprise (RISE) Zone
  - f. USM Company Creation and Innovation Metrics Development Update



**BOARD OF REGENTS**

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

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**TOPIC:** Featured Startup: InferCabulary

**COMMITTEE:** Economic Development and Technology Commercialization

**DATE OF COMMITTEE MEETING:** Thursday January 31, 2019

**SUMMARY:** Beth Lawrence, CEO & Co-Founder of InferCabulary, is an alumna of Towson University, and the company is currently a member of the TU Incubator. She will present InferCabulary, a web-based, visual vocabulary and reasoning program that uses a new approach to vocabulary instruction.

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

**FISCAL IMPACT:** There is no fiscal impact

**CHANCELLOR'S RECOMMENDATION:** n/a

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COMMITTEE RECOMMENDATION:

DATE:

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BOARD ACTION:

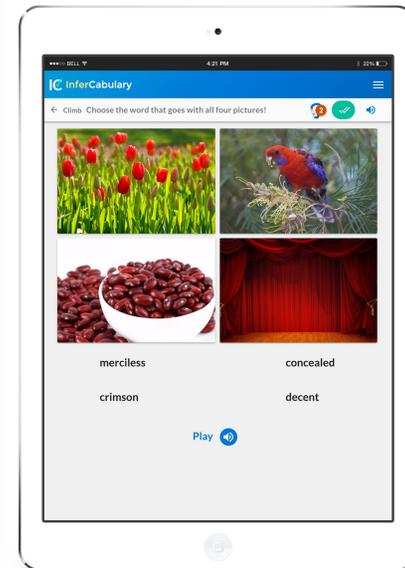
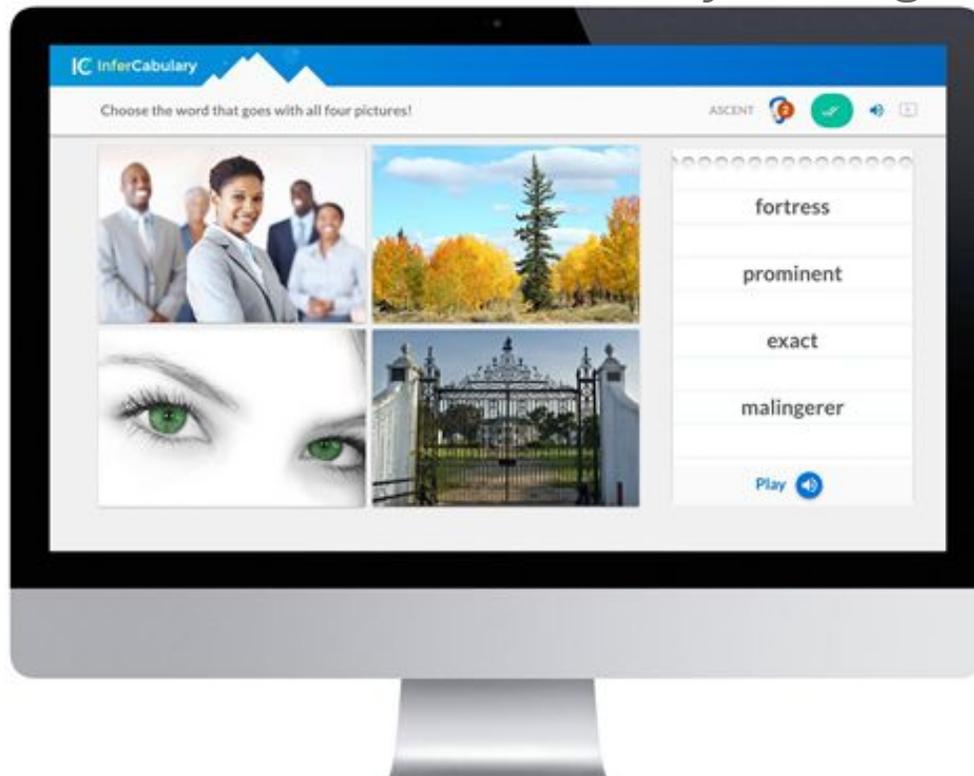
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SUBMITTED BY: Tom Sadowski (410) 576-5742

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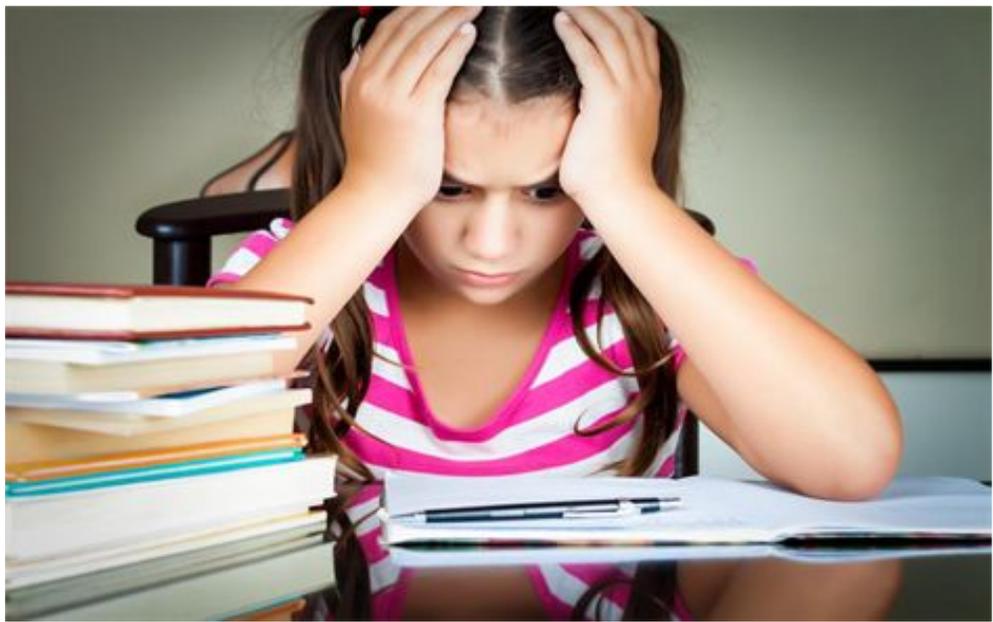
# **InferCabulary** Literacy Brought to Life



**Beth Lawrence & Deena Seifert: Thought Leaders in Language & Literacy; Co-Founders**

# THE PROBLEM

65%



# InferCabulary



Schools save  
**\$\$\$ on Specialists**



Educators save  
**Time** & have an  
**effective** tool



Students learn  
**far** more words

# THE PROBLEM

## Prudent

[pru-dnt] adjective

Wise or judicious in practical affairs;  
sagacious; discreet or circumspect; sober

# TEAM

## Superstars In Language, Tech, Business & Edtech Sales



**Beth Lawrence**  
CEO & Co-Founder



**Deena Seifert**  
COO & Co-Founder



**Withers Davis**  
CTO



**John Sawyer**  
CFO



**Dan Sladek**  
VP Sales

## Advisors: Multiple Successful Exits



**Andy Morrison**  
Educated Capital  
Altis Reach  
Hooked On Phonics  
Earobics



**Frank Bonsal III**  
Director, TU Incubator



**Phyllis Hillwig**  
Business Strategist  
Wisewire  
Bridge EdU

# SECRET SAUCE

## Using Semantic Reasoning



# IC InferCabulary

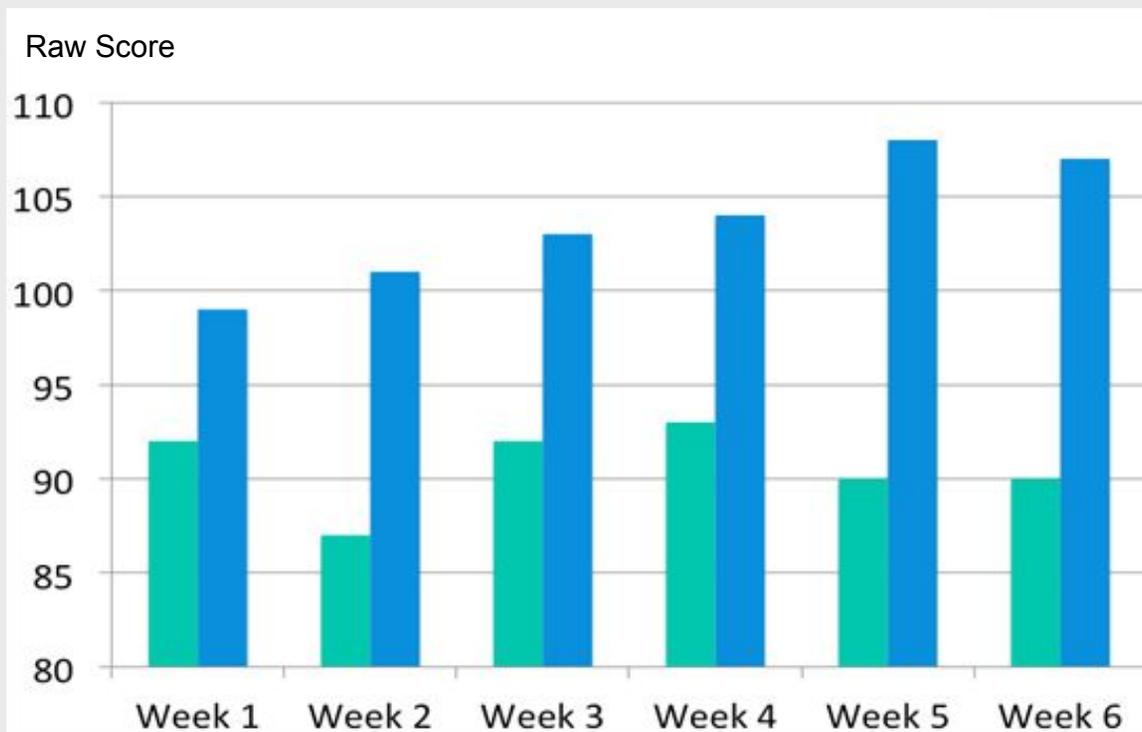


brusque  
bemused  
prudent  
discontent

Play

Which ONE word goes with all four pictures?

# RESEARCH-BACKED



# TESTIMONIALS

**“Powerful, engaging tool...students of all abilities are making significant gains.”**

Barb F., Resource Teacher  
Pulaski Community Middle

**“Best I’ve seen in a long time....does what no other product can do.”**

Dr. Michael Hart,  
International. Literacy Expert

**“They rush into class and independently complete InferCabulary. They love it!”**

Becky H., Literacy Specialist  
Olentangy Local Schools

**“My students make immediate connections to text now and they’re using complex words in class and at home. WOW!”**

Lauren D., ELL Teacher  
Peekskill School District

# TRACTION

11,000

**PRODEO**  
ACADEMY

ST. FRANCIS CATHOLIC SCHOOL  
1918

PULASKI COMMUNITY  
SCHOOL DISTRICT

THE INTERNATIONAL MONTESSORI SCHOOL  
學問

MUMONOGI  
1873

TOWSON UNIVERSITY.

BALTIMORE CITY  
PUBLIC SCHOOLS

CALVERT  
SCHOOL

THE BOYS' LATIN  
SCHOOL OF MARYLAND

Groves  
ACADEMY

GILMAN

Peekskill Schools  
*At the Peak of Excellence!*

Jemicy School

THE  
LAB  
SCHOOL

The Odyssey School  
What begins here changes everything.

OLENTANGY LOCAL  
SCHOOL DISTRICT

Texas RFPs  
Won:  
esc6  
spring  
ISD

# MARKET & BUSINESS MODEL

**\$5B**

Annual spend  
on vocabulary

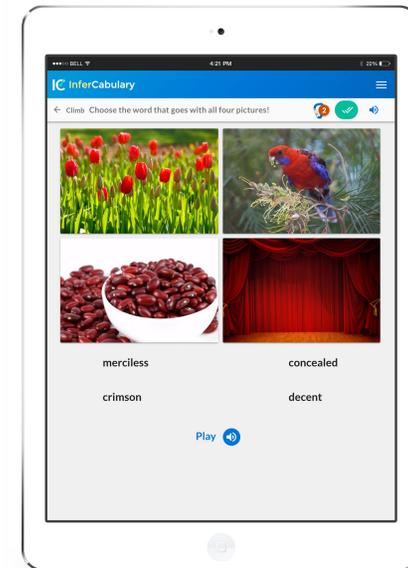
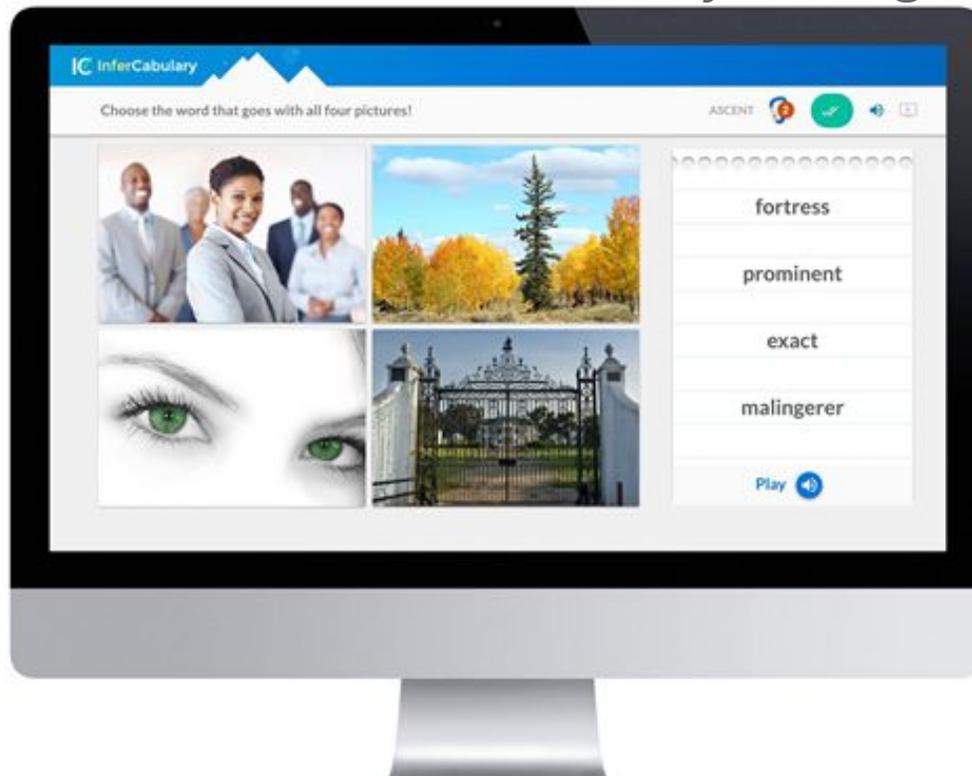
**\$9**

per student/  
year

# PARTNERSHIP DISCUSSIONS



# **InferCabulary** Literacy Brought to Life



Contact: Beth Lawrence at 410.375.5374 or [beth@infercabulary.com](mailto:beth@infercabulary.com)



**BOARD OF REGENTS**

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

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**TOPIC:** Towson University Economic, Innovation and Entrepreneurship Development

**COMMITTEE:** Economic Development and Technology Commercialization

**DATE OF COMMITTEE MEETING:** Thursday January 31, 2019

**SUMMARY:** Daraius Irani, PhD, Vice President Strategic Partnerships and Applied Research will present Towson University economic, innovation and entrepreneurship development updates, including: the hiring of Chief Entrepreneurship Officer Dr. Nick Hammond, with a goal to unify and optimize entrepreneurship activities; exploring a new location for the TU Incubator that is closer to campus; and organizational change around technology transfer to better foster innovation.

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

**FISCAL IMPACT:** There is no fiscal impact

**CHANCELLOR'S RECOMMENDATION:** n/a

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SUBMITTED BY: Tom Sadowski (410) 576-5742

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University System of Maryland Board of  
Regents  
Committee on Economic Development  
& Technology Commercialization  
Towson University  
January 31, 2019

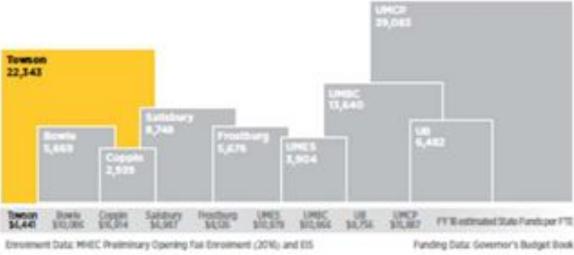
# Towson's Impact

**TU'S ECONOMIC IMPACT**

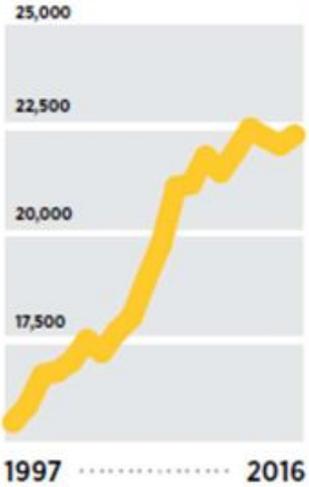
**\$1.87 BILLION**

Towson University's forecasted contribution to the state's economic activity in FY 17, including goods and services bought and sold.

**COMPARED TO SIMILAR USM INSTITUTIONS**  
(Headcount)



**TU ENROLLMENT GROWTH** (1997-2016)



**DRIVING BUSINESS**

**TU ALUMNI OWN OR LEAD:**

- Aetna
- Bridges Montessori
- Brick Bodies
- Carchex
- Chesapeake Bank and Trust
- Citigroup
- Genesis HealthCare
- Greater Baltimore Cultural Alliance
- MedStar Union Memorial Hospital
- Stella Maris Hospice
- T. Rowe Price



**9,000+ STUDENTS** are involved in **160 ACTIVE SERVICE PARTNERSHIPS** with Maryland community businesses and organizations.

# Towson Builds Leaders

## Alumni Companies

## Faculty Companies



## Student Companies



ZERO GRAVITY CREATIONS



TESSEMAE'S™



# The Team

- Strategic Partnerships and Research (SPAR)
  - Regional Economic Studies Institute (RESI)
  - Center for Geographic Information System (CGIS)
  - BTU - Partnerships for Greater Baltimore
  - **Entrepreneurship**
    - Venture Creation
    - Towson University Incubator
    - Center for Innovation and Entrepreneurship

# Activity

- Entrepreneurship activities across the University
  - All at the college level or divisional level-no University wide strategy
- Hired Chief Entrepreneurship Officer Dr. Nick Hammond
  - Develop and implement University wide-strategy
  - Performed a gap analysis
  - Goal is to unify and optimize entrepreneurship activities
  - Exploring new location for current incubator closer to Towson's CBD
  - Looking at a significant organizational changes around technology transfer to better foster innovation

# Focus on the Future

- Student Entrepreneurship and Leadership 2.0
- Alumni and Mentor Engagement
- Faculty Development and Innovation
- Community Engagement
- Place-making
- Industry Engagement



**BOARD OF REGENTS**

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

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**TOPIC:** USM Office of Economic Development Update

**COMMITTEE:** Economic Development and Technology Commercialization

**DATE OF COMMITTEE MEETING:** Thursday January 31, 2019

**SUMMARY:** Vice Chancellor Thomas Sadowski will provide an update of the USM Momentum Fund, Maryland Technology Infrastructure Fund (formerly Excel MD), the Governor's Opportunity Zone Task Force, and Regional Institutional Strategic Enterprise (RISE) Zones. Lindsay D'Ambrosio, USM Venture Development Director, will present an update on USM Company Creation and Innovation Metrics Development.

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SUBMITTED BY: Tom Sadowski (410) 576-5742

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# USM Economic Development

*Briefing for Economic Development & Technology  
Commercialization Committee*

January 31, 2019





## MomentUM Fund

### *Activity to Date*

**12** companies presented to the Advisory Board over the first six quarters, more than **160** companies counseled to date:

- **4** have been invested in by Momentum
- **1** in process of closing
- **3** are pending, seeking co-investment with Momentum Fund staff help
  - 2 recently approved by Advisory Committee on January 7, 2019
- **3** closed or are closing funding rounds without Momentum;
  - 2 were cyber companies with out-of-state VC commitments
- **1** was rejected by the Board

*Presentation made to USMF Board of Directors requesting help establishing broader mentorship and co-investor network. Numerous co-investor, family office and side-car investment fund options being investigated, to include **creation of USM Opportunity Zone Investment Fund to compliment Momentum Fund, TEDCO funds and address later-stage opportunities***



## Investments To Date

**MF Fire (College Park)** \$193k invested, \$1.2MM round  
World's most advanced wood burning stove

**Next Step Robotics (UMB)** \$250k invested, \$1.140MM round (in Series 2 Round currently)  
Exoskeleton robot to reverse foot drop for stroke victims

**NAWEC (College Park)** \$350k invested, \$1.51MM round  
Advanced pulse jet engine

**Zest Tea (College Park)** \$300k invested, \$1.035MM round  
High Caffeine Tea, Energy drink product

**PaverGuide (College Park)** \$300k out of \$650k round ... in closing process  
Advanced semipermeable pavement system

**Total:** ~\$1.393MM invested matched with ~\$4.142MM from others (~3X)

**Co-Investors (sample):** RW Deutsch Foundation, Bunting Foundation, Abell Foundation, Lord Baltimore Fund, Angel investors, high net worth individuals, Chesapeake Bay Seed Capital Fund.



## Funding Rounds in Process

**Veralox (UMB)** \$500k MMF commitment to \$4.5MM round; 3.5MM raised - can close w/\$625k  
Therapeutics for rare blood disorders

**Airgility (UMCP)** \$300k MMF commitment to \$1.0MM round  
Unmanned aircraft systems, drone platform design and manufacturing

**Retrium (UMCP alum)** \$300k MMF commitment to \$1.3MM round; approx. \$240k left to close  
Agile software development management product, incorporating “retrospective” design and collaboration process

**Potential and Committed Co-Investors (sample):** TEDCO, University of Vermont Life Sciences Fund, Middleland Capital, Hatteras, various angels



## Workforce and Talent Development

### **USM Workforce Initiative**

- Governor has included year-two funding of \$20 million in budget request
- Working with Government Affairs and institutions to secure approval in Annapolis

### **Technology Entrepreneurship Credentialing**

- Working with USM Kirwan Center for Academic Innovation to develop new certification program designed for aspiring tech entrepreneurs, innovators and CEOs

### **MD Dept of Commerce E-Nnovation Initiative Grants**

- **Towson University** will create the Cyber Education and Resource Center. The award of \$500,000 from the state will be combined with a private contribution to create the Towson University E-Nnovation Endowed Professorship for a faculty member within TU's Department of Computer and Information Sciences.
- **University of Maryland, College Park** received a contribution to its Clark Leadership Chair in data analytics. The chair, which is also funded by the A. James & Alice B. Clark Foundation, will focus on computer science and mathematics, as well as research areas where data analytics is applied.

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## Workforce and Talent Development ... *continued*

### **MD Tech Internship Program**

- 65 employers from 9-counties participated
- 83% of employers initiated new internships with funding; 84% were small businesses with less than 150 employees
- 65 students from 15 institutions participated (3.4 avg GPA)
- 80% of students reported increased exposure to tech career opportunities; 90% stated they plan to stay in MD to pursue their career

### **UMBC Training Centers Cyber Apprenticeship**

- MD Dept of Labor grant for \$150k secured to develop program
- 177 have applied to program
- Employers interviewing candidates; Northrop Grumman has hired 4 apprentices and 1 full-time employee thus far
- NGS considering a national partnership with UMBC TC



## Partnerships

### **ARL**

- ARL has designated USM as academic partner
- Working with ARL on new Quantum Computing COE at Adelphi
- Planning underway for new hub at Aberdeen Proving Ground (APG) specializing in high performance computing, AI, autonomous technology, machine learning
- Joint request for federal funding for infrastructure and planning to be submitted early-2019

### **Naval Air Systems Command @ PAX River**

- Working with Southern MD Navy Alliance and partners at Southern MD Higher Education Center to develop new Education Partnership Agreement with Navy
- Support R&D needs and foster increased industry collaboration/investment

### **MD Technology Infrastructure Fund (formerly EXCEL Maryland)**

- \$16 million included in Governor's budget to initiate program
- Working with Governors Office on legislative approach to enhance TEDCO authority
- USM working with institutional partners to develop project proposals for funding consideration
- Industry being marshalled to help drive initiative and invest 3x/4x state funding

## Place Making

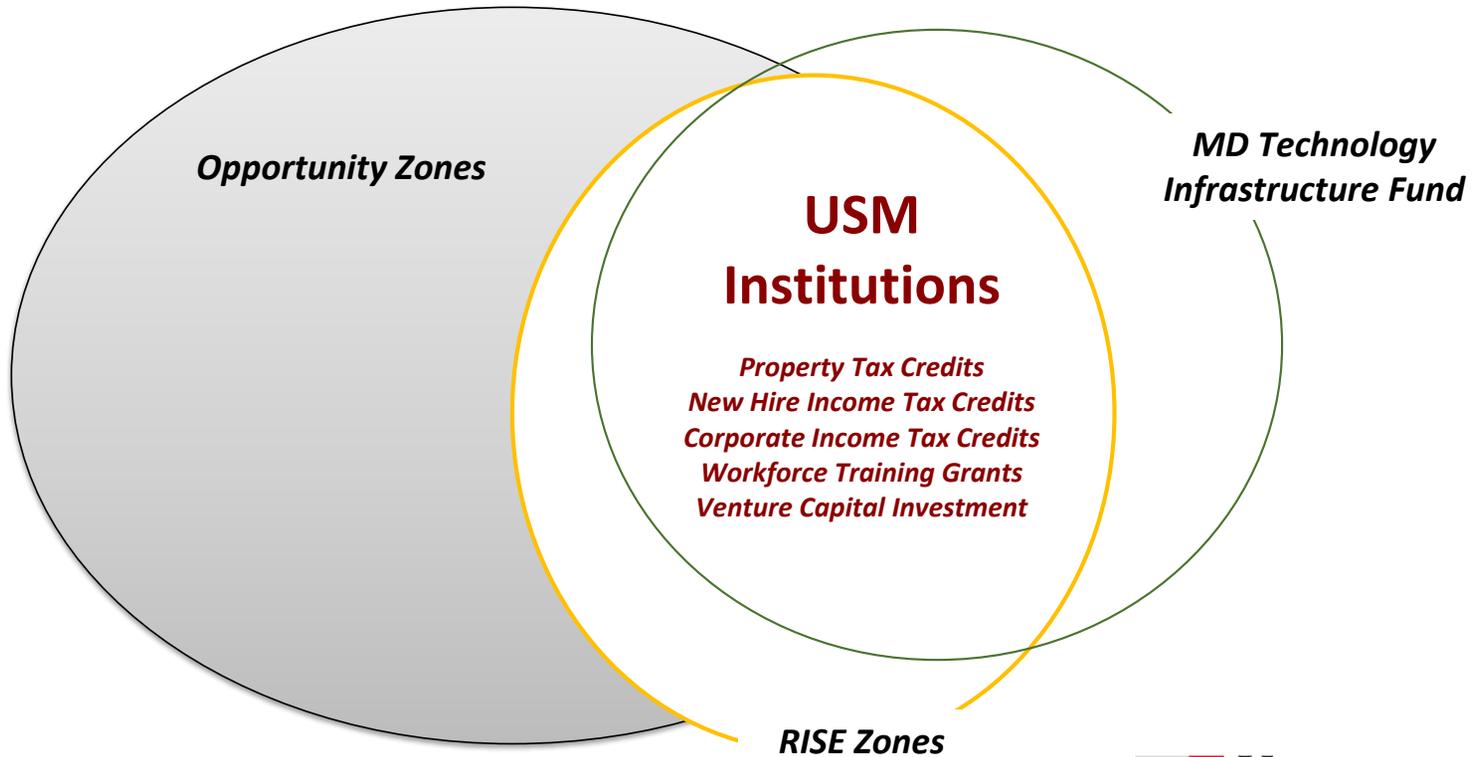
### **Federal Opportunity Zone Program**

- Hogan Administration has keen interest in application of this valuable federal economic development program, allocating \$56 million in this years budget request to support growth and investment
- Zones impact/benefit all but two USM Institutions state-wide
- USM will sit on Governor's Task Force to help develop strategy and robust incentive policy to encourage strategic real estate and venture investment
- ***Exploration of USM Opportunity Zone Investment Fund to compliment Momentum Fund and later-stage opportunities***

### **Regional Institution Strategic Enterprise (RISE) Zone**

- Working with Dept of Legislative Services on enhancement to RISE Program to offer direct to incentives to desired startups and small business tenants
- Towson University Application pending; Shady Grove and Bowie State projects in planning phase

## Growing Maryland's Innovation Ecosystem



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## Culture

### **IP Policy and Patent Trolling Updates**

- Reviewed USM patent trolling protection practices and found current safeguards to be up to or beyond standard
- Continue working with USM institutions to determine need for changes to USM IP policy and share “best-practice” protection measures

### **USM Venture Creation and Innovation Metrics**

- Towson’s Regional Economic Studies Institute (RESI) has surveyed USM institutions
- USM has conducted deep dive into company creation data and is discussing how we measure and track our venture creation and innovation activity
- Using AUTM and national best practices as model
- Developing refocused reporting methodology to engage and better inform partner institutions
- Revised dashboard planned Spring of 2019



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# USM Company Creation Report

## *A Strong Foundation*

- Data back to FY 2012; regular reporting period (every 6 months)
- Allowed to easily track impact (e.g., 34 Tier 2 companies, up 20% from last time)
- Demonstrated seriousness of USM commitment to economic development and venture creation



# USM Economic Development Database

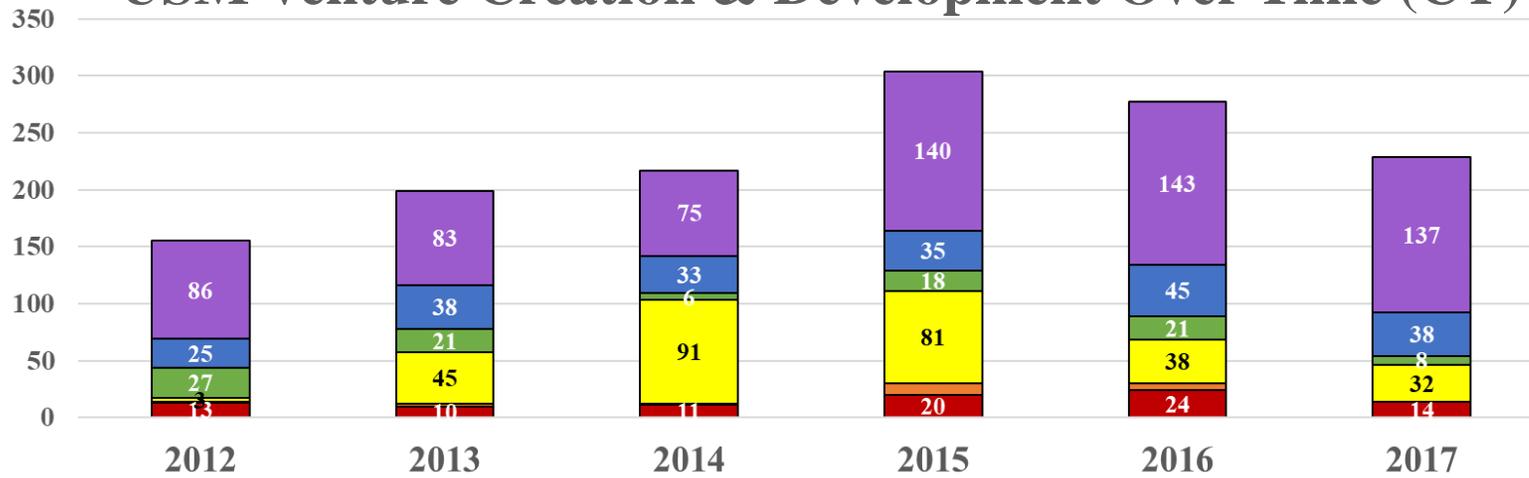
## *Sustainability and Growth*

USM Office and EcoDev Partners recognize need to refocus data collection, display, and use

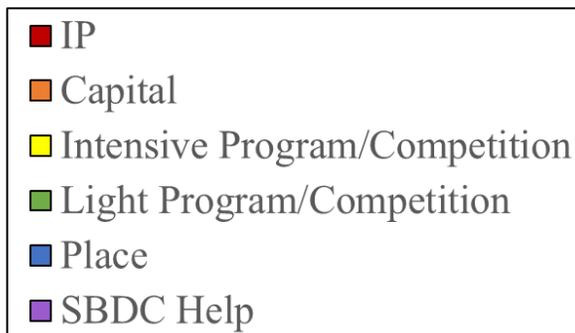
- **Prompt strategic conversations** - *“what’s happening?”*
  - Analyze within greater context – Add Resources section (e.g., *entrepreneurship majors*)
  - Allow affiliation with multiple institutions, resources (e.g., *startup life story*)
  - Allow for granularity but low reporting burden; beyond counting (e.g., *“faculty founder”*)
- **Provide operational usefulness and support** - *“how can we help?”*
  - Unify data (e.g., *USM startup portfolio of 800+, resource catalog*)
  - Answer questions and share observations (*keeping in mind limitations of correlation, etc.*)
- **Accurately tell the story** of the diversity and connectivity of the USM innovation ecosystem



## USM Venture Creation & Development Over Time (CY)



### USM Support



Based on only **existing (refined) company creation reports!** Includes all tiers.

← Subcategories of Attracted, Retained

← Subcategories of Intensive, Light



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# USM Economic Development Database & Dashboard

## *Summary*

A **platform** built on the strong foundation of the company creation report that:

- **Prompts strategic conversations** – between the USMO and institutions; and within and among institutions – to achieve better outcomes in venture creation and development.
- **Provides operational usefulness and support** - facilitate a “portfolio” perspective, (beyond counting), a desire expressed by USM entrepreneurs.
- **Accurately tells the USM venture creation and economic development story**

# Questions to the Committee

**How would the Committee like to use current and future data collected?**

Which information and depictions should remain?

What is priority information to be examined every six months by the Committee?

Student-led?  
Faculty-led?  
Women or minority-owned?

Economic outcomes?

Entrepreneurship resources  
(provided, used)?

