



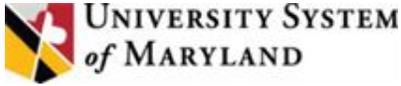
**Board of Regents
Committee on Economic Development and Technology Commercialization**

**12:30pm on March 26, 2020,
Conference Call, Dial: 888-431-3632 Access Code: 4037014**

Public Session Agenda

USM Office of Economic Development Update – Tom Sadowski, Vice Chancellor for Economic Development (Information Item)

- a. Momentum Fund
 - i. Investment update
 - ii. Operating principles overview
- b. Legislative Priorities
 - i. Tech Infrastructure Fund
 - ii. SBIR Matching Grants and Tech Assistance
 - iii. Others
- c. USM Competitiveness Effort
 - i. Key Partnerships
 - ii. Staff and Potential Funding Resources
- d. Venture Development Report
 - i. Report for July to December 2019
 - ii. Venture Outreach



BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION
INFORMATION OR DISCUSSION

TOPIC: USM Office of Economic Development Update

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: Thursday March 26, 2019

SUMMARY: Vice Chancellor Tom Sadowski will provide a comprehensive update of USM Economic Development initiatives and related activities, to include: the USM Momentum Fund, strategic legislative priorities, and USM's Competitiveness Effort. Venture Development Director Lindsay Ryan will provide an update on USM Venture Development activities and related metrics.

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

FISCAL IMPACT: There is no fiscal impact

CHANCELLOR'S RECOMMENDATION: n/a

COMMITTEE RECOMMENDATION:

DATE:

BOARD ACTION:

DATE:

SUBMITTED BY: Tom Sadowski (410) 576-5742

USM Economic Development

*Briefing for Regents Committee for Economic
Development Tech Commercialization*

March 26, 2020



USM Economic Development *Updates*

- Momentum Fund
 - Investments to date
 - Operating Principles
- Legislative Priorities
 - Tech Infrastructure Fund
 - SBIR, E-nnovation, Etc.
- USM Competitiveness Effort
 - Key Partnerships
 - Staff and Potential Funding Resources
- Venture Development Activity Report

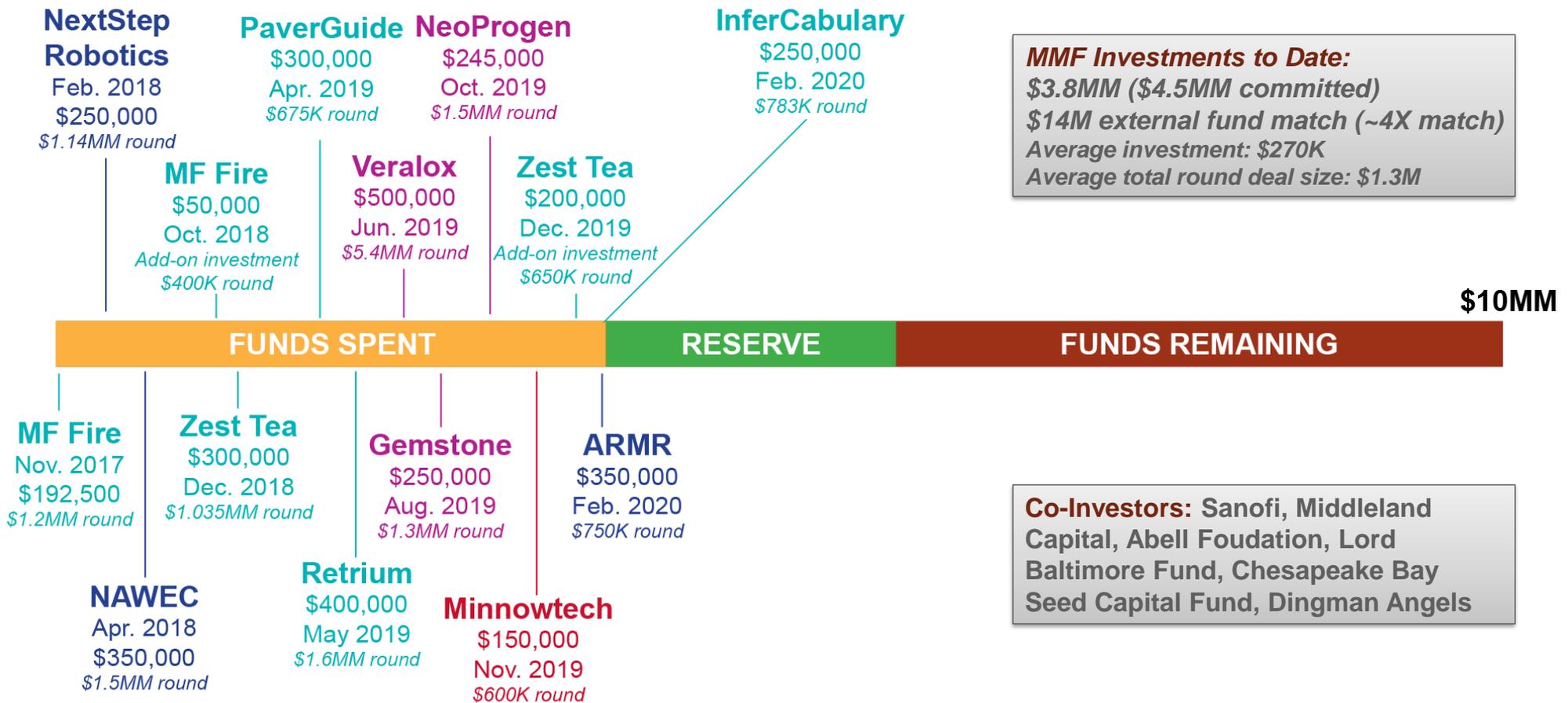


Momentum Fund Overview

- **\$10MM University System of Maryland investment fund**
 - Established by USM Board of Regents June 2016. Investments started mid-2017
 - Funds from USM Fund Balance, allocated over four-year period
 - Goal of raising an additional \$15MM from non-USM entities
- **Investing in the most promising USM-affiliated technologies and people**
 - Supports USM-affiliated companies
 - Helps promising, typically pre-revenue companies, bridge the funding gap, getting them to a point where they can raise a funding round with actual VCs or be acquired
- **Organization**
 - Assistance of private investment community help us make the best decisions
 - Tasked with creating guidelines - we have developed since
- **Eligibility criteria**
 - Located in Maryland
 - Affiliated with a USM institution:
 - University-owned intellectual property
 - Founded by University faculty, staff, student, or alum
 - Located in a University-affiliated research park or incubator



Investments





Portfolio Companies



UMCP IP and Alum
World's most advanced wood burning stove



UMB IP, Towson Alum
Exoskeleton robot to reverse foot drop for stroke victims.



UMCP IP, Alum
Advanced pulse jet engine



UMCP Alum
High caffeine tea, energy drink product



UMCP IP
Advanced semipermeable pavement system



UMCP Alum
Agile software development management product



UMBC and UMCP Alums
Tissue regeneration via stem cells



UMB IP and Alum
Anticoagulant drug, therapeutics for rare blood disorders



UMB IP and Faculty
Cell-based therapy for cardiovascular disease



UMCES Alum
Sonar to measure shrimp biomass



BioPark Tenant
Next-gen tourniquet



Towson Alum, TU Incubator startup
Ed-tech vocabulary app



Operating Principles: Goals & Governance

- **Goals**

- Catalyzing investment in early stage start-ups in Maryland and providing funding alongside other sources of private capital
- Generating financial returns which will be reinvested in future start-ups
- Accelerating the success of USM start-ups and providing a bridge to larger financings
- Expanding economic development in the State of Maryland
- Recruiting and retaining innovative students and faculty in the State of Maryland
- Supporting the development of the innovation ecosystem in key sectors and USM centers of excellence

- **Governance**

- Managing Director - performs due diligence, gathers expert panels, provides due diligence to the **Advisory Board** and the **Executive Committee**, assists when needed to raise co-investment, manages the closing process on behalf of USM
- Advisory Board - provides non-binding advice and recommendations to MMF on funding decisions
- Executive Committee - guides the policy and direction of the MMF and it also makes all final funding and non-funding decisions.

Operating Principles: Investment Criteria

- Ability to attract follow-on investment
- Significant market validation (note: life sciences may not have this criteria met)
- A strong coachable management team
- Clear, actionable milestones
- A planned or projected exit in an industry appropriate time frame
- A valuation or valuation cap of less than \$10 MM
- Evidence of solid operating principles and practices
- Sustainable, defensible competitive advantage
- If a scientific investment, evidence of receipt of non-dilutive grant funding



2020 Legislative Session

Maryland Technology Infrastructure Fund / Partnership Program – SB 602/HB 1239

- Enhancement of TEDCO authority to manage fund and invest in innovation infrastructure projects
- Target projects will offer 3x-4x external investment to match state funding
- Working with Gov's Office, legislative leadership, TEDCO, MD Commerce and JHU
- \$10 million allocated in Governor's supplemental budget contingent on passage of bill
- ***Bill to be addressed in May Special session***

Maryland Tech Internship Program – HB 79

- Expanding definition of tech business to include non-profits
- Legislative and administrative options being explored to enhance funding

Small Business Innovation Research (SBIR) Grant Assistance – PASSED

- Authorizes TEDCO to provide State matching funds and provide technical assistance to companies pursuing federal grants to further develop and scale technologies
- Testimony offered House and Senate; passed by both chambers and sent to Governor

Maryland Ennovation Initiative Fund (MEIF) – PASSED

- Reauthorization of program and enhanced funding
- USM recommendations to MD Commerce enhance program flexibility and utilization

2020 Legislative Session – Other Bills of Interest

End Ineffective Business Subsidies Act of 2020 – FAILED **Business and Economic Development Tax Credits – FAILED**

- Eliminates tax incentives, including the biotech investment tax credit
- Many business community and industry reps across Maryland testified against the bill
- HB 565 more restrictive and includes cyber tax credit and RISE Zone approval phase out = Passed Ways & Means and Referred to Senate Budget & Tax
- Met with key Delegates to submit opposition

Advanced Clean Energy and Clean Energy Innovation Investments and Initiatives – SB 739/HB 1426

- Establishes an accelerator program coordinated by the Maryland Energy Innovation Institute and requires the Maryland Energy Innovation Institute to coordinate with TEDCO and MIPS.
- Directs \$2.1M in annual funding from the Maryland Strategic Energy Investment Fund to the Maryland Energy Innovation Fund in support of the Maryland Clean Energy Center and Maryland Energy Innovation Institute.

Makerspace Initiative Pilot Program– SB 826/HB 1455

- Seeks to expand makerspaces in the state. Establishes a program by TEDCO and OpenWorks to provide technical assistance to non-profit entities seeking to establish makerspaces in the state.
- Provides funding for non-profit and local governments to establish or expand makerspaces.
- House version passed and sent on to Senate Budget & Tax Committee



Maryland's (and USM's) Competitiveness

Maryland's economic prosperity is driven by its innovation-led economic growth, harnessed by key **advanced industries**. These industries are anchored by world-class university system, federal research assets and sustained by a significant talent base. According to The Brookings Institution, "Advanced industries encompass the nation's highest-value economic activity ...and are the country's best shot at innovative, inclusive, and sustainable growth." (*Source: Brookings Institution, America's Advanced Industries—February 2015*)

These industries reshaping our global economy include —cyber security, life sciences, AI, quantum computing, robotics, medical devices and clean energy.

Key elements of innovation-led strategy:

- Advance strategic university and industry collaborations
- Incent place-making and/or innovation "ecosystem" development to retain/attract talent, foster collaboration and enable concentration of activity near federal labs and education/research institutions
- Address STEM talent and workforce needs through multi-institutional, industry inspired, traditional and non-traditional approaches
- Attract and leverage significant, long-term public/private investment
- Employ programmatic and opportunistic approach

USM Economic Development *Competitiveness Effort – Key Initiatives*

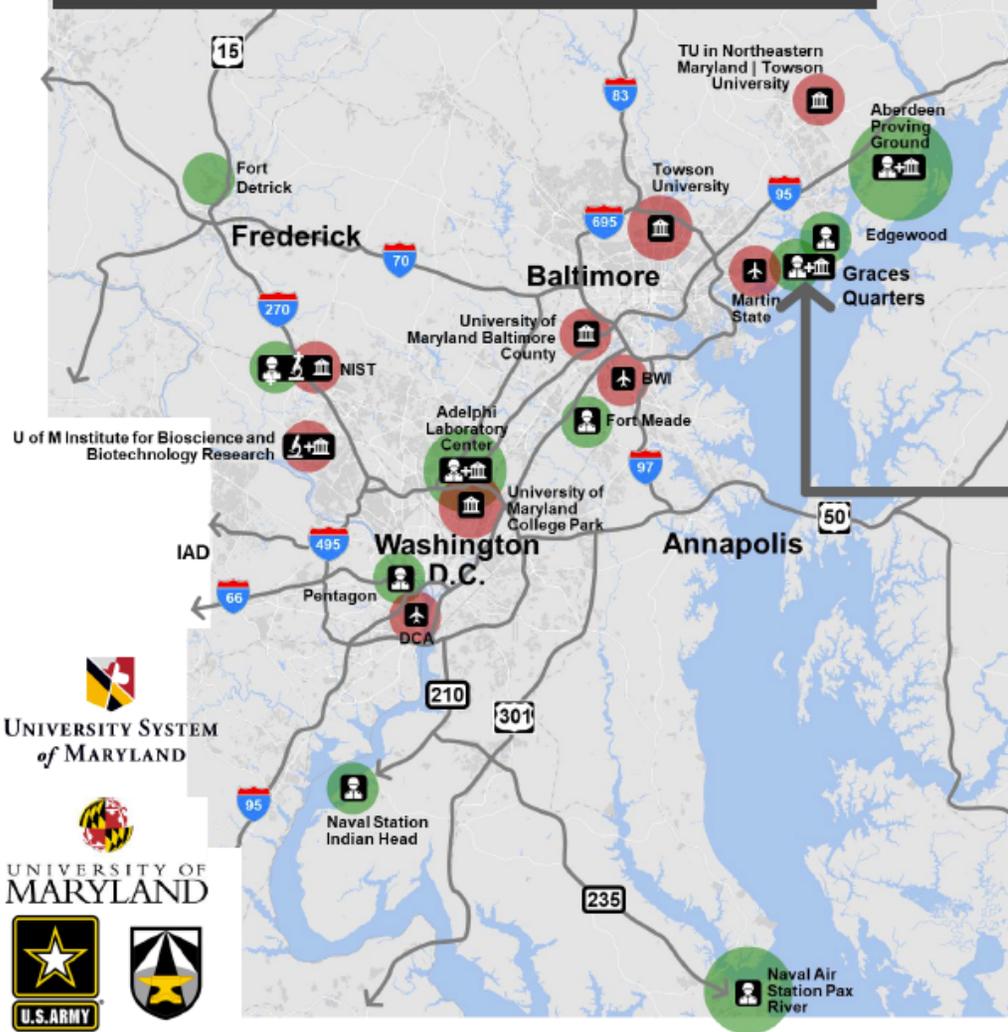
- Army Research Lab - Grace's Quarters @ Aberdeen Proving Ground (APG)
 - ARL/UMD Robotics Research Collaboration Campus (R2C2)
 - UM UAS Test Site / TechPort North
- Amazon (AWS) Partnership Agreement – Pending
- Industry Partnerships Director – Contract pending
- MD Quantum Alliance... IBM LOI
- NSA STEM Education Partnership Agreement – Pending
- U.S. Economic Development Admin Grant opportunity
 - Pursuing Federal funds to develop cyber business acceleration program
 - USM, UMBC, UB collaboration



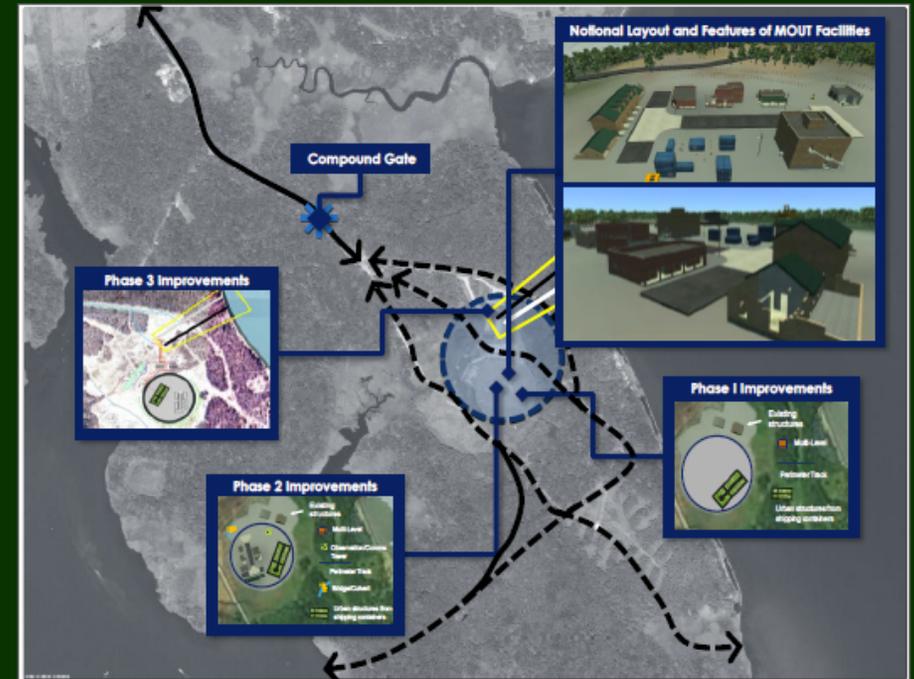
ARL/UMD Robotics Research Collaboration Campus – R2C2

- Advanced research, simulation and testing facility
 - Robotics, autonomous systems, mixed augmented and virtual reality
- Shared laboratories and research staff
 - Challenge programs
 - Connectivity with SoMD (UAS Test Site, Building 3)
- Joint curriculum development and upskilling training
 - Systems engineering
 - Robotics
- Student and entrepreneur engagement
 - Internships; class and student group projects
 - Incubator/Accelerator programs; MIPS

Regional Context



Advanced Robotic Research Collaboration Campus (R2C2) at Graces Quarters, MD



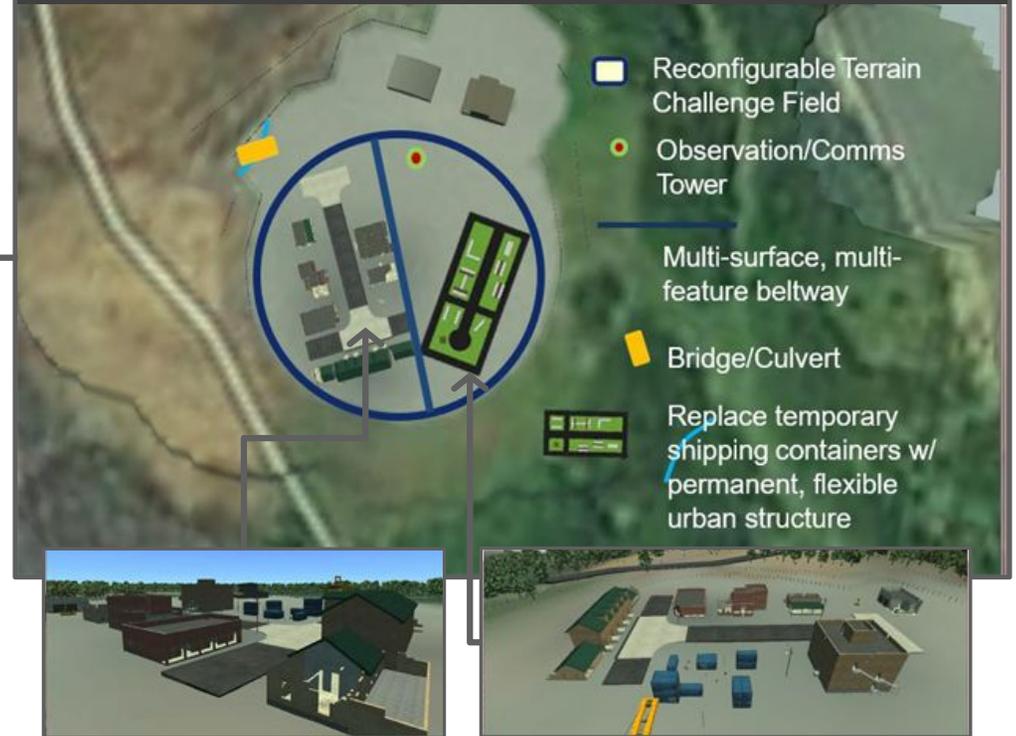
Partnership Plan:

- Link with Army Futures Command and Army Research Lab advanced autonomous maneuver RDT&E facility and program at Graces Quarters
- Leverage local synergies for vehicle and operational testing:
 - Aberdeen Proving Ground High Performance Computing and Additive Manufacturing
 - Air - Martin State Airport and Chesapeake/Atlantic Range (NAS Pax River)
 - Unmanned Aircraft Systems – UAS Chesapeake Corridor

Site Attributes



Main Testing Site Facilities



Key Research Capabilities

- Outdoor Robotics Testing
- Indoor Robotics Testing
- Maker Space
- High Performance Computing
- Multi-Domain Battlespace Features and Complexity
- Wooded and Urban Testing Environments





USM Venture Development Report

Company Characteristics

	2 nd Half 2018	1 st Half 2019	2 nd Half 2019
# Companies Added to USM Portfolio	45	53	45
Minority-Owned*	33%	33%	66%
Woman-Owned*	25%	26%	35%
USM Founder	24%	35%	40%
IP-Based	20%	22%	7%
# Current Portfolio Companies Re-Engaged	15	19	18

- Now includes:**
- **Bowie State University**
 - **UMCP's Do Good**

**of percent known, between 70-75%*



USM Venture Development Report

2nd Half 2019: 45 Companies New to USM

Examples from June-December 2019

- **Probeo** – A non-invasive assessment of transplant kidney viability with IP out of UMCP and UMB and a UMCP faculty founder that received an MII Company Formation investment.
- **My Furr's Guitar** – Workshops and a future product kit where children build and customize their own simplified guitar, founded by a UB student.

Industries

Health / Life Science	33%
Cyber, IT, and Educational Technology	25%
Advanced Materials, Energy, and Environmental Technology	11%
Services/Consulting	3%
Retail / Consumer Product or Service	22%
Agricultural Technologies	3%
Others	3%

In their first six months of interacting with USM...

21 companies joined an incubator or other space

23 companies received capital

25 companies participated in a program



28 companies (62%) leveraged more than one type of USM resource!



USM Venture Development Report

2nd Half 2019: USM-Affiliated Capital Deployed

Source of Capital	Amount Deployed	# Companies
Momentum Fund	\$ 845,000	4
MII Investment	\$ 150,000	1
Other Equity Investment		0
MIPS Funding	\$ 1,680,500	18
Other Non-Dilutive Capital*	\$ 138,473	12
TOTAL CAPITAL DEPLOYED	\$ 2,813,973	35

Compare to previous period: \$ **3,178,393** **46**

Still preliminary. May include additional investment.

**includes in-kind capital*

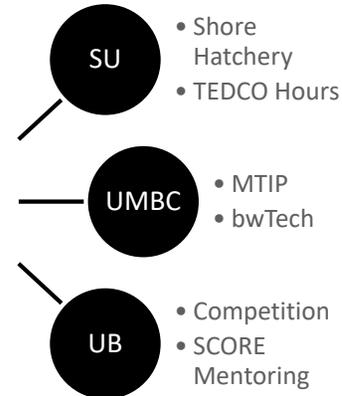
USM Venture Development Report

Ad Hoc Venture Outreach

Ad Hoc Interactions with USM and Non-USM Ventures



USM Resources External Resources





USM Venture Development Report *Ad Hoc Venture Outreach*

In 2019, USM Venture Development Director fielded over 139 requests for assistance and completed over 100. Of the completed requests:

- 51% came from entrepreneurs affiliated with the USM
- 20% came from USM economic development partners
- 15% came from entrepreneurs NOT (yet) affiliated with USM

The nature of requests varies. Of the **67 requests served from 40 entrepreneurs in 2019**, approximately:

- 60% involved connecting an entrepreneur to a resource or person
- 40% seek advice from USM directly

USM Venture Development Report

Scaled Venture Outreach

Ad Hoc Interactions with USM and Non-USM Ventures



USM Venture List



USM Resources

External Resources

