Board of Regents  
Committee on Economic Development and Technology Commercialization  

February 4, 2021  
Virtual (public listen only access at 443-353-0686, Conference ID: 660 272 489)  
Committee Members will be sent Zoom information  

Public Session Agenda  

(1) **SU Shore Hatchery & Featured Entrepreneurs: Panel of Competition Winners** – Christy Weer, Dean of the Perdue School of Business, and William Burke, Professor of Practice in Information and Decision Sciences and Executive Director for Economic Development, and the selected winners below (Information Item)  
   - Brett & Megan Hines – The Buzz Meadery  
   - Daniel Lunz – Capsulomics  
   - Matthew Cohen – SIMPLi  
   - Shantiyyah Hobby– CLUTCH by Tia Dash  
   - Cameron Kane – Valkyrie Software Solutions, LLC  

(2) **BSU Workforce Development and Industry Partnerships** – Lethia Jackson, Professor Chairman, Department of Technology & Security, Bowie State University (Information Item)  

(3) **USM Office of Economic Development Update** – Tom Sadowski, Vice Chancellor for Economic Development (Information Item)  
   a. COVID-19 Task Force Activity  
   b. Legislative Activity  
   c. Venture Development Report  
   d. Momentum Fund
TOPIC: SU Shore Hatchery & Featured Entrepreneurs: Panel of Competition Winners

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: February 4, 2021

SUMMARY: The Philip E. and Carole R. Ratcliffe Foundation Shore Hatchery Program at Salisbury is a $2 million 10-year initiative to assist entrepreneurs and help them create new ventures and jobs in the community. Christy Weer, Dean of the Perdue School of Business, and William Burke, Professor of Practice in Information and Decision Sciences and Executive Director for Economic Development will share information about this initiative and its impact and present a panel of the following selected winners from the most recent business plan competition:

- Brett & Megan Hines – The Buzz Meadery
- Daniel Lunz – Capsulomics
- Matthew Cohen – SIMPLi
- Shantiyyah Hobby – CLUTCH by Tia Dash
- Cameron Kane – Valkyrie Software Solutions, LLC


More information about the initiative can be found here: https://www.salisbury.edu/academic-offices/business/shore-hatchery/annual-report.aspx

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
Impacts 2020 – Shore Hatchery
Annual Report

• 48 Businesses Actively Reporting
• 406 Jobs Created
• 21 Mentors Assigned
• From 2013-2020 Spring, 70 Businesses Awarded $1,397,000
• 60% of businesses identify as minority, female or veteran-owned
• In 2019, Shore Hatchery businesses generated $15,999,531 in revenue
Shore Hatchery – Selected Fall 2020 Winners

• Brett & Megan Hines – The Buzz Meadery
• Daniel Lunz – Capsulomics
• Matthew Cohen – SIMPLi
• Shantiyyah Hobby – CLUTCH by Tia Dash
• Cameron Kane – Valkyrie Software Solutions, LLC
TOPIC: BSU Workforce Development and Industry Partnerships

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: February 4, 2021

SUMMARY: Lethia Jackson, Professor Chairman, Department of Technology & Security at Bowie State University, will discuss programming that partners with industry and to place students in technical internships.

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
Advisory Board Partners
# What is Computer Technology?

<table>
<thead>
<tr>
<th>Information Technology</th>
<th>Information Systems</th>
<th>Computer Science</th>
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<td>is telecommunications, trouble shooting problems with computers and creating as well as managing databases to ensure the security of business operations.</td>
<td>is the study of integrated components that make up the information systems such as networks of hardware and software to support an organization’s decision making and business objectives.</td>
<td>is the study of computing, algorithms, mathematics, engineering, logic, artificial intelligence, software and hardware functionality, and development.</td>
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<table>
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<tr>
<th>Engineering Technology</th>
<th>Computer Engineering</th>
<th>Computer Technology is…</th>
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<tbody>
<tr>
<td>is a practical application of engineering and science.</td>
<td>is a scientific approach to build machines, computer Hardware and software and other items.</td>
<td>Innovation, Information Technology, Information Systems, Business, Engineering Technology, Computer Science and Computer Engineering. It includes programming, networking, analog and digital electronics, and robotics.</td>
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</table>
Computer Technology Program’s History

- Rochester Institute of Technology began in 1998
- First graduating class in 2000
- Developed cybersecurity courses in 2010
- Formed new department in 2018: Department of Technology & Security
- Received $25 million grant from DOE
Technology Literacy Levels

Level 0

Level 1

Associate Degree

What is it?

Earned in 2 years

Requires about 20 courses

Earned as a career preparation degree or credited towards a bachelor degree

Goal - Level 3

Level 4

Level 5

February 4, 2020 Committee on Economic Development & Technology Commercialization - Public Session
What does Computer Technology program contain?

- **Education**
  - Curriculum
  - Internships
  - Workshops
  - Presentations

- **Outreach**
  - Summer Camps
  - Industry Engagement
  - Professional Development

- **Research**
  - Hackathons
  - Publications
  - Prototypes

- **Innovation**
  - Patents
  - Copyrights
  - Entrepreneurship
  - MakerSpace

- **Laboratory Experience**
  - Virtual
  - Sandbox
  - Battle (red hat/blue hat)
Core Courses

- Cybersecurity Courses
- Programming
- Data Science
- Database
- Client Operating Systems

- **Software Developer**
  - *Voted #1* Best Technology Job

- **IT Manager Solutions Architect**
  - *Voted #2* Best Technology Job

- **Computer Network Architect**
  - *Voted #7* Best Technology Job

- **Information Security Analyst**
  - *Voted #5* Best Technology Job
Tracks

**Network Enterprise Infrastructure** - Students will develop knowledge and skills in cloud computing, data management and infrastructure management. Is the hardware and software resources of an entire network that enable network connectivity, communication, operations and management of an enterprise network.

**Data Science and Database Administration** - Students use technical skills to predict and describe trends to support decision-making. In addition, students will implement and design the architecture (logical and physical) structure of a Database Management System such as MySQL.

**Internet Technologies** - Students will learn how to configure sensors, wireless network connections, edge-computing platforms, explain the role of big data, cloud computing in an IoT system. Prepares students to design, program, and develop skills in edge technology. Students will gain experiences they can employ in creating prototypes and systems using the Internet of Things.
Industry Engagement and Outreach

Industry Driven Capstone Courses
Prototype innovation and implementation offered in (5) Capstone courses. Past Performance by MITRE, Prince George’s County IT Department, AWS, SAIC, Maryland Center at Bowie, Stinger-Ghaffarian Technology, Honeywell, and Northrop Grumman.

Industry Driven Research

Hackathons and MakerSpace
NVCC Innovation Hackathon
IBM Blue Hack
Black Enterprise Hackathon – BE Smart
HBCU Maker and Innovations Showcase
Bot-A-Thon – sponsored by HP and AWS
Governor Hogan Girls Hackathon
CAE Codebreaker Challenge
PGCIT dept. – Barracuda Challenge
Airport Cooperative Research Program Competition

Summer Programs/ Internships/Co-Op
## Key Numbers

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<tr>
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<tbody>
<tr>
<td>Number of students enrolled</td>
<td>262</td>
<td>311</td>
<td>350</td>
</tr>
<tr>
<td>Number of students graduated and received CAE-CD certification</td>
<td>37</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Number of Transfer students</td>
<td>22</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Graduated in 3 yrs or less</td>
<td>54%</td>
<td>53%</td>
<td>75%</td>
</tr>
<tr>
<td>Number of First Time Students</td>
<td>15</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>Graduated in 4 yrs or less</td>
<td>53%</td>
<td>52%</td>
<td>69%</td>
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TOPIC: USM Office of Economic Development Update

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: Thursday February 4, 2021

SUMMARY: Vice Chancellor Sadowski will provide an update of the USM COVID Research & Innovation Task Force and discuss relevant state legislative activity. Lindsay Ryan, Venture Development Director, will present the Venture Development Report. Claire Broido Johnson, Managing Director of the USM Maryland Momentum Fund, will present an update on the Fund.

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

FISCAL IMPACT: There is no fiscal impact.

CHANCELLOR’S RECOMMENDATION: n/a

SUBMITTED BY: Tom Sadowski (410) 576-5742
USM Economic Development

Briefing for USM Economic Development and Technology Commercialization Committee

February 4, 2021
USM Economic Development

Agenda

- COVID-19 Task Force Activity
- Legislative Activity
- Venture Development Report
- Momentum Fund
USM COVID Research & Innovation Task Force

Ongoing and Forward Initiatives

- **Public Health Communications Challenge**: Challenge prize competition aimed at encouraging Marylanders experiencing “COVID fatigue” to remain vigilant, maintain sound public health practices and good hygiene, and when available, to get vaccinated. Winners announced February 8th!

- **Research & Innovation, Acceleration**: As the pandemic continues, researchers continue to provide assistance. Support continues for COVID-related entrepreneurs.
USM COVID Research & Innovation Task Force

**Ongoing and Forward Initiatives**

- **Bioproduction and Vaccine Development Strategy:** Working with the Governor’s Life Science Advisory Board (LSAB), MD Commerce and MD Tech Council on comprehensive strategy to develop MD’s bio-manufacturing, vaccine development, medical supply chain and related workforce capacity; exploring federal funding and industry partnership opportunities.

- **Connected DMV Pandemic Center Response Initiative Partnership:** USM is lead academic partner in regional strategic planning and federal funding pursuit effort.

- **Long-Term Strategy Workshop:** Two-part workshop led by USM experts on solutions to current and future pandemic challenges.
  - Pandemic Predicting & Tracking
  - Business & Economics
  - Medicine & Life Sciences
  - Community Engagement
USM Legislative Update

Direct USM Impact

- **RISE Zones:** [TBA] Clarify intention - incent the location of start-ups based on tech transfer and commercialization at research-institutions.
- **TEDCO:** SB0639 Inclusion Fund; [TBA] Enhanced MII support
- **Western MD/TEDCO:** SB0709 Pilot tech infrastructure program
- **MTIP:** HB0307 Lower GPA requirement; include non-profits
- **Clean Energy:** HB0419 (SB0460) Adding funding for Maryland Energy Innovation Institute
- **SBDC:** [2020 veto override SB0493] Adding funding
- **E-Novation:** [2020 veto override SB0465] Extension, adjustments
USM Legislative Update

Indirect USM Impact - Economic Development

- **Department of Small Business, Entrepreneurship, and Innovation:** [HB0062](#)
  Establishes this new department, using parts of MD Commerce and MD Labor and all of the Governor’s Office of Small, Minority, and Women Business Affairs.

- **Manufacturing:** [HB0443/SB0577](#)
  Makerspace bill incl. Western Maryland Works and Baltimore’s OpenWorks. [SB0444/HB0658](#) Manufacturing in a Digital Economy

- **Investment Tax Credits:**
  - [SB0019](#) Biotech. Lowers % back to investor; limits how much any one company can benefit in a given year and over time.
  - [SB0160](#) Cyber. Expands to “innovation” across certain industries (except biotech), determined by the Maryland Economic Development Commission after consulting with DOL. Allows three years of participation, up from one. Extends until 2025.
  - [HB0360/SB0246](#) Angel tax credit.

- **Other Tax Credit Modifications:** [SB0196](#) R&D credit; [HB0278](#) job creation

- **SBIR:** [HB0654](#) incentive proposed; [SB0459](#) assistance bill modification
Venture Development Report  
July - December 2020

Total Ventures Supported: 112
- Ventures New to USM: 77
- USM Ventures Supported in a New Way: 35

VENTURES NEW TO USM

- Have USM Founders: 49 (64%)
- Based on USM Intellectual Property: 25 (18%)

Support Provided by USM

By Industry
- Life Science: 33%
- Consumer & Food: 25.9%
- Information Technology: 21.4%
- Consulting & Other: 10.7%
- Sustainability & Agriculture: 8.9%

New! 88% Startups (vs small business)

- Provided Capital: 61
  - 37 for the First Time
- Mentored or Trained through a Program: 64
  - 44 for the First Time
- Moved into a University Space: 32
  - 24 for the First Time
- Helped Hire Interns or Employees: 2
  - 2 for the First Time
Venture Development Report

Ventures Supported Over Time

Number of Ventures Supported Over Time

Number of “New Start” Businesses by Intensity of SBDC Advising
Venture Development Report

10 had a USM touchpoint (at least) across 4 institutions

Annual list of 20 most promising Baltimore tech companies:
- Look for indicators of growth such as funding, early client traction, office space and work to establish a repeatable model.
- Those that choose the big idea.
- Team tenacity and track record.


Where Are They Now (EDTC Featured Startup Updates)

**Mindstand Technologies**, featured startup to the EDTC Committee in June of 2019, is led by UMBC students and is #7 in the Technical.ly Baltimore RealLIST.

**Veralox**, from September 2019, is a Momentum Fund portfolio company and recently achieved major milestones, submitting an IND application with the FDA and receiving orphan drug designation.

**BondTrue**, from November 2019, has received a federal SBIR award and additional MIPS funding.
Overview of Maryland Momentum Fund

- **$10MM University System of Maryland investment fund**
  - Goal of generating at least $15MM in co-investment from non-USM entities.

- **Investing in the most promising USM-affiliated technologies and people**
  Helps promising early-stage companies bridge the early stage funding gap, getting them to a point where they can raise additional funding with VCs or be acquired.

- ** Eligibility criteria**
  - Located in Maryland
  - In funding round, will have a co-investor(s) that will invest at least as much as MMF. MMF helps companies find co-investors.
  - Affiliated with one of the 12 USM institutions across the State of Maryland (any one of the below):
    - University-owned intellectual property
    - Founded by University faculty, staff, student, or alum
    - Located in a University-affiliated research park or incubator
Why is this Fund Needed?

**LACK OF RISK-TAKING INVESTORS**
Most investors have made money on real estate and manufacturing. A high percentage of employees in DMV are government employees (not entrepreneurs).

**CAPITAL CHASM**
A variety of very early stage seed capital investors and/or grants. Significant downstream investors. Very little in the middle.

**LACK OF MIDDLE-LEVEL/HIGH-LEVEL MANAGERS**
More opportunities with more companies in NYC/Silicon Valley/Boston means lots of people move. The Momentum Fund can foster a small stable of entrepreneurs with great experience providing support, advice, financing to early stage entrepreneurs.

_The Momentum Fund can help stimulate investment and teach early-stage entrepreneurs how to pitch, build business plans, and raise money._
**Investments**

**MMF(University+USMO) Investments:** $6.9M
$5.2 MM just from MMF
$43M external fund match (~5.2 match)
Average investment: $274K
Average total round deal size: $1.7M

**NextStep Robotics**
- Feb. 2018
- $250K
- $1.14M Round

**PaverGuide**
- Mar. 2018
- $300K
- $675K Round

**MF Fire**
- Oct. 2018
- $192.5K
- $1.2M Round
- Add-on investment $400k Round

**Zest Tea**
- Dec. 2018
- $200,000
- $1.035M Round

**Neoprogen**
- Oct. 2019
- $245K
- $1.5M Round

**InferCabulary**
- Feb. 2020
- $250K
- $783K Round

**Pathotrac**
- May 2019
- $150K
- $1.2 MM Round
- Add-on investment $650K round

**n5 Sensors**
- Sept. 2020
- $300,000
- $1M Round

**Voxy**
- Oct. 2020
- $500,000
- $6.75M Round

**PaverGuide**
- Aug. 2020
- $250,000
- $500k Round

**Neoprogen**
- Aug. 2020
- $500K
- $5.4M Round

**Zest Tea**
- Dec. 2019
- $200,000
- $1.2 MM Round

**Retrium**
- May 2019
- $400,000
- $1.6M Round

**Minnowtech**
- Nov. 2019
- $150K
- $600K Round

**DataKwip**
- Apr. 2019
- $250
- $650K Round

**MiRecule**
- Aug. 2020
- $250K
- $3.5 MM Round

**KaloCyte**
- June. 2020
- $300,000
- $1M Round

**VisiSonics**
- Nov. 2020
- $500,000

**ARMR**
- Feb. 2020
- $350K
- $1.3MM Round

**KaloCyte**
- Feb. 2020
- $350K
- $750K Round

**n5 Sensors**
- Sept. 2020
- $300,000
- $1M Round

**Voxy**
- Oct. 2020
- $500,000
- $6.75M Round

**DeepTech**
- Technology
- Consumer Product
- Therapeutic
- Data
- Education Technology
- Aquaculture
- MedTech
- Other Life Science

Co-Investors: Sanofi, Abell Foundation, Lord Baltimore Fund, Alexandria Venture Investments, ReThink Education, The American Family Insurance Institute for Corporate and Social Impact, Chesapeake Bay Seed Capital Fund, Dingman Angels
Investment Detail

Portfolio Investment by Industry

- Deep Tech
- Technology
- Med Tech
- Consumer Product
- Data
- Therapeutic
- Aquaculture
- Education Tech
- Life Science (non Therapeutic or MedTech)

Portfolio Investment by Founder Type

- Women Founded
- African American Founded
- Other

Portfolio Investment by School Affiliation / Connection

- UMB
- UMCP
- UMB/UMBC
- UMCES
- Towson
- UB
- UMGC/UMB/Towson
- UMCP/UMBC

Investments by School (alongside MMF)

- UMB
- UMCP
- UMBC
- UMCES
- UMGC

February 4, 2020 Committee on Economic Development & Technology Commercialization - Public Session
Appendix

Additional Venture Development Report
Information
Venture Development Report

Example New Ventures (2 of 2)

Healthcare and Life Sciences
- HSR.health [http://hsr.health/](http://hsr.health/) Health data platform
- InovCares [https://inovcares.com/home](https://inovcares.com/home) Telehealth platform
- Vitalize [https://www.appvitalize.com/](https://www.appvitalize.com/) Mobile app to reduce physician burnout
- LASARRUS [https://www.lasarrus.com/](https://www.lasarrus.com/) Wearable devices for rehabilitation
- TruGenomix [https://trugenomix.com/](https://trugenomix.com/) PTSD diagnosis via biomarkers
- miRecule [https://mirecule.com/team/](https://mirecule.com/team/) RNA-based, tailored therapeutics

Manufacturing and Advanced Materials | Transportation; Wholesale; and Logistics
- Trivance Design [https://trivancedesign.com/](https://trivancedesign.com/) 3D print shop
- 3D Flexible [https://www.3dflexible.com/](https://www.3dflexible.com/) 3D electronics printing
- Blimp Logistics [https://www.blimplogistics.com/](https://www.blimplogistics.com/) Drone delivery network

Energy; Sustainability; and Agriculture | Food; Drink; and Hospitality
- Silvec Biologics [https://silvecbiologics.com/](https://silvecbiologics.com/) Protection against tree diseases
- SIMPLi [https://simpligood.co/](https://simpligood.co/) Ethical food sourcing
Retail; Product; and Personal Services

- CamSKNS  
  https://www.camskns.com/  
  Vinyl skins for digital cameras
- CLUTCH by Tia Dash  
  www.clutchbytiadash.com  
  Gender-neutral luxury handbags & apparel
- Dulceology  
  https://dulceology.com/  
  Local artisan bakery

Technology; IT; and Cyber / Social Impact; Education; and Youth

- STEPS  
  https://www.stepseducation.org/  
  Non-profit offering tutoring and advising
- Haystack Solutions  
  http://www.haystacksolutions.com/  
  Cyber workforce development
- Cide Kic  
  www.cidekick.com  
  Event support services
- Edullo  
  https://www.edullo.com/  
  Tutor marketplace & student-written guides
- Voxy EnGen  
  www.voxyengen.com  
  Language upskilling platform
- hotglue  
  https://hotglue.xyz/  
  Data integration for B2B SaaS developers
- Dobbs Defense Solutions  
  https://dobbs-defense.com/  
  IT/cyber for the defense community