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>
</tr>
</thead>
<tbody>
<tr>
<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>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engineering Technology</th>
<th>Computer Engineering</th>
<th>Computer Technology is…</th>
</tr>
</thead>
<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>
</tr>
</tbody>
</table>
Computer Technology Program’s History

- Rochester Institute of Technology
  - Began 1998

- First graduating class
  - 2000

- Developed cybersecurity courses in 2010

- $25 million grant from DOE

- Formed new department 2018
  - Department of Technology & Security
Technology Literacy Levels

Level 0

Level 1

Level 2

Goal - Level 3

Level 4

Level 5
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

Summer Programs/Internships/Co-Op

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
# Key Numbers

## 2017 – 2018
- Number of students enrolled: 262
- Number of students graduated: 37 and received CAE-CD certification

<table>
<thead>
<tr>
<th>Number of Transfer students</th>
<th>Graduated in 3 yrs or less</th>
<th>54%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of First Time Students</td>
<td>Graduated in 4 yrs or less</td>
<td>53%</td>
</tr>
</tbody>
</table>

## 2018 – 2019
- Number of students enrolled: 311
- Number of students graduated: 47 and received CAE-CD certification

<table>
<thead>
<tr>
<th>Number of Transfer students</th>
<th>Graduated in 3 yrs or less</th>
<th>53%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of First Time Students</td>
<td>Graduated in 4 yrs or less</td>
<td>52%</td>
</tr>
</tbody>
</table>

## 2019 – 2020
- Number of students enrolled: 350
- Number of students graduated: 47 and received CAE-CD certification

<table>
<thead>
<tr>
<th>Number of Transfer students</th>
<th>Graduated in 3 yrs or less</th>
<th>75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of First Time Students</td>
<td>Graduated in 4 yrs or less</td>
<td>69%</td>
</tr>
</tbody>
</table>
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

COMMITTEE RECOMMENDATION: DATE:

BOARD ACTION: DATE:

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.
- **MII Program: [TBA]** Enhance support beyond current institutions
- **E-Novation: [TBA – 2020 SB0398]** Potential extension, adjustments
- **MTIP: HB0307** Lowering GPA requirement and including non-profit employers
- **Clean Energy: HB0419 (SB0460)** Adding funding for Maryland Energy Innovation Institute
- **SBDC: [2020 veto override SB0493]** Adding funding
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.

- **Makerspace Initiative Pilot Program:** [HB0443](#)
  Western Maryland Works and OpenWorks in Baltimore City involved.

- **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

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

New! 88% Startups (vs small business)

Support Provided by USM

<table>
<thead>
<tr>
<th>Support Provided by USM</th>
<th># Ventures Supported</th>
<th># Ventures Supported for the First Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provided Capital</td>
<td>61</td>
<td>37</td>
</tr>
<tr>
<td>Mentored or Trained through a Program</td>
<td>64</td>
<td>44</td>
</tr>
<tr>
<td>Moved into a University Space</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>Helped Hire Interns or Employees</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
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

Technically Baltimore RealLIST

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.

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.

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.
<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMCP IP and Alum</td>
<td>Advanced wood burning stove</td>
</tr>
<tr>
<td>UMCP Alum</td>
<td>Agile software development management product</td>
</tr>
<tr>
<td>UMBC and UMCP Alums</td>
<td>Tissue regeneration via stem cells</td>
</tr>
<tr>
<td>Towson Alum, TU Incubator startup</td>
<td>Software platform to manage energy across buildings</td>
</tr>
<tr>
<td>UMCP Alum</td>
<td>Anticoagulant drug, therapeutics for rare blood disorders</td>
</tr>
<tr>
<td>UMCP IP and Faculty</td>
<td>Cell-based therapy for cardiovascular disease</td>
</tr>
<tr>
<td>UMCP IP and Faculty</td>
<td>Language upskilling platform</td>
</tr>
<tr>
<td>UMCP Alum and Faculty</td>
<td>Semiconductor sensor technology</td>
</tr>
<tr>
<td>UMCP IP and Faculty</td>
<td>Spatial and personalized audio solutions</td>
</tr>
<tr>
<td>UMCP Alum and Faculty</td>
<td>High caffeine tea, energy drink product</td>
</tr>
<tr>
<td>UMCP Alum</td>
<td>Advanced pulse jet engine</td>
</tr>
<tr>
<td>UMCP IP and Alum</td>
<td>Exoskeleton robot to reverse foot drop for stroke victims.</td>
</tr>
<tr>
<td>UMCP Alum</td>
<td>Sonar to measure shrimp biomass</td>
</tr>
<tr>
<td>UM BioPark Tenant</td>
<td>Next-gen tourniquet</td>
</tr>
<tr>
<td>Towson Alum</td>
<td>Ed-tech vocabulary app</td>
</tr>
<tr>
<td>UMCP IP and Faculty</td>
<td>Food safety testing technology</td>
</tr>
<tr>
<td>UMCP Alum and Faculty</td>
<td>Dried artificial red blood cell</td>
</tr>
<tr>
<td>UMCP IP</td>
<td>Advanced semipermeable pavement system</td>
</tr>
</tbody>
</table>
Investment Detail

Portfolio Investment by Industry

- Deep Tech: 1,495,000
- Technology: 150,000
- Med Tech: 850,000
- Consumer Product: 300,000
- Data: 692,500
- Therapeutic: 1,400,000
- Aquaculture: 850,000
- Education Tech: 500,000
- Life Science (non Therapeutic or MedTech): 650,000

Portfolio Investment by School Affiliation / Connection

- UMB: 3,742,500
- UMCP: 1,345,000
- UMB/UMBC: 250,000
- UMCES: 250,000
- Towson: 150,000
- UB: 250,000
- UMGC/UMB/Towson: 150,000
- UMCP/UMBC: 75,000

Investments by School (alongside MMF)

- UMB: 796,250
- UMCP: 75,000
- UMBC: 125,000
- UMCES: 685,000
- UMGC: 50,000

Portfolio Investment by Founder Type

- Women Founded: 14
- African American Founded: 1,400,000
- Other: 692,500
- Other: 850,000
- Other: 500,000
- Other: 650,000
- Other: 1,495,000
- Other: 150,000
- Other: 850,000
- Other: 300,000
Appendix

Additional Venture Development Report Information
### Venture Development Report

### Example New Ventures (2 of 2)

#### Healthcare and Life Sciences
- **Chat Health** [http://chathealth.herokuapp.com/](http://chathealth.herokuapp.com/) - Chatbots for medical info & conversations
- **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
Venture Development Report

Example New Ventures (2 of 2)

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