AGENDA FOR OPEN SESSION

1. **Renewing Committee Charge – Change of Committee Name**

2. Research and Economic Development Review
   - **New Awards of Distinction**
   - **Research IT Infrastructure provided by MDREN** – Jerry Waldron, Interim Executive Director
     - University of MD Muri Awards
       - Bala Balachandran – Minta Martin Professor; Distinguished University Professor Department of Mechanical Engineering Disorder – UMD: “Influenced Collective Dynamics of Nonlinear Oscillator Systems.”

3. **Momentum Fund Update – Update on Minnowtech**, CEO Ken Malone

4. **Venture Heads and Major Resources**
   - In-Person Retreat Highlights

Q and A
Board of Regents
Committee on Research and Economic Development
January 25, 2024

**Charge:**

The Committee on Research and Economic Development shall provide strategic leadership for the USM's research, economic development, technology commercialization, innovation, and entrepreneurial initiatives, programs, and policies.

**Role and Responsibilities:**

The Committee on Research and Economic Development shall consider and report or recommend to the Board of Regents on matters concerning economic development and technology commercialization, innovation and entrepreneurial initiatives, and research, including translational research and technology transfer.

Members of the Committee on Research and Economic Development are appointed annually by the Chairperson of the Board. The Committee shall meet as needed, but no fewer than four times during the fiscal year.

Created in July 2011 in recognition of the increasing importance of translational research, entrepreneurship and innovation, and the supply of skilled workers in STEM fields for the State of Maryland, the Committee, working with the Vice Chancellor for Research and Economic Development, may expect to receive information for review in order to consider, and/or act on any of the following matters:

A. Aligning resources with market demand

B. Leveraging USM resources through collaborations

C. Enhancing partnerships with industry, state, and federal entities

D. Strengthening the USM Research and Innovation ecosystem, including engaging with research funding and commercialization partners, enhancing research administration and compliance infrastructure, and fostering excellence in scholarship, research, creative, and innovation

E. Strengthening the USM entrepreneurial ecosystem, including engaging the investment community and enhance access to capital for USM affiliated startups and innovators
Office of the Vice Chancellor for Research and Economic Development

Board of Regents Committee on Economic Development and Technology
Commercialization

Michele Masucci, Ph.D.
Vice Chancellor for Research and Economic Development

March 29, 2024
Agenda

1. Renewing Committee Charge - Change of Committee Name

2. Research and Economic Development Review
   - New awards of distinction
   - Research IT Infrastructure provided by MDREN – **Jerry Waldron**, Interim Executive Director
   - University of MD Muri Awards

   **Bala Balachandran** - Minta Martin Professor; Distinguished University Professor
   Department of Mechanical Engineering Disorder – UMD: “Influenced Collective Dynamics of Nonlinear Oscillator Systems”

   **Edo Waks** - Professor in Electrical & Computer Engineering – UMD:
   “Piezoelectric Control of Quantum States in Solid-State Defects (PIQS)”

3. Momentum Fund - Update on Minnowtech, CEO Ken Malone

1. Renewal of Committee Charge

Committee on Economic Development and Technology

Commercialization Charge update:

- Change of name from “Economic Development and Technology Commercialization” to Research and Economic Development

- The name change reflects the development of new Office of Vice Chancellor for Research and Economic Development, with an added focus of research

- The name change reflects the charge that includes a focus to include research and related initiatives, programs, and policies
  - Review of policies underway, recommendations to follow
Committee on Economic Development and Technology

Commercialization Charge update:

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2. HIGHLIGHTS ACROSS USM

• Research IT Infrastructure provided by MDREN
  Jerry Waldron, Interim Executive Director

• University of Maryland MURI Awards
  Bala Balachandran - Minta Martin Professor;
  Distinguished University Professor
  Department of Mechanical Engineering Disorder – UMD: “Influenced Collective Dynamics of Nonlinear Oscillator Systems”
  Edo Waks - Professor in Electrical & Computer Engineering – UMD: “Piezoelectric Control of Quantum States in Solid-State Defects (PIQS)”
• Instrument development support to Dr. Mehdi Benna at UMBC’s NASA-funded CSST Center, the Lunar Environment Monitoring Station (LEMS)

• Professor Lori Harvin, Coppin State University, Selected as inaugural Business Higher Education Forum Innovation Fellow
  https://www.bhef.com/faculty-innovation-fellowship

• NSF Convergence Accelerator Award to Ming Li at UMCES for developing tools to manage salt contamination of fresh water - $600K

• Sloan Research Fellowship for studying plasmas surrounding black holes and neutron stars awarded to UMD’s Sasha Philippov, 75K
  https://sloan.org/fellowships/2024-Fellows

• Greater Baltimore Committee Tech Hub resource application requesting $70M advances to EDA
MDREN – Maryland Research and Economic Development Network

MDREN offers a variety of high-quality, reliable services to members beyond internet connectivity to support collaboration, network and IT infrastructure needs.

Jerry Waldron – Interim Executive Director
https://www.mdren.net/
Location – Adelphi, Maryland

Support 22 colleges and universities in Maryland with redundant high-speed internet connectivity.

Provide access to Internet 2

Facilitate access to Eduroam

Provide DDoS mitigation to deter network attacks.

Provide orchestrated high-speed data transfer for large data sets between member campuses and sites globally.

Support campus network engineers

Provide researchers and engineers with information related to cyberinfrastructure grants and funding sources
Current projects

- Network upgrade – expanding capacity to 100GB to each campus.
- Extending expanding capacity to western and southern Maryland.
- NSF Strategy Grant – working with campus researchers at smaller universities and HBCUs to provide access to HPC resources
• Contact Information

• Jerry Waldron
• Interim Executive Director
• jwaldron@usmd.edu
• 301-479788
• www.mdren.net
Multidisciplinary University Initiative (MURI) efforts involve teams of researchers investigating high priority topics and opportunities that intersect more than one traditional technical discipline. For many military problems this multidisciplinary approach serves to stimulate innovations, accelerate research progress and expedite transition of results into naval applications.

**Bala Balachandran** - Minta Martin Professor; Distinguished University Professor Department of Mechanical Engineering Disorder – UMD: “Influenced Collective Dynamics of Nonlinear Oscillator Systems”

**Edo Waks** - Professor in Electrical & Computer Engineering – UMD: “Piezoelectric Control of Quantum States in Solid-State Defects (PIQS)”
MURI Presentation

Prepared for USM BOR

Bala Balachandran
Minta Martin Professor
Distinguished University Professor

March 29, 2024
What is a MURI?

- MURI stands for Multidisciplinary Research Initiative and the MURI Program is a part of the basic defense related research projects of the Department of Defense (DoD)
  - A tri-service University Research Initiative sponsored by the Office of Naval Research (ONR), the Army Research Office (ARO), and the Air Force Office of Scientific Research (AFOSR)
- Started in 1985, DoD’s MURI program has allowed teams of investigators from multiple disciplines to generate collective insights, facilitating the growth of cutting-edge technologies to address DoD's unique challenges
  - Accelerated, high-risk basic research to understand or achieve something that has never been done before
  - Significant scientific breakthroughs with far reaching consequences to the field of science, economic growth, revolutionary new military technologies, and commercial sector applications
    - Doppler radar detection leading to new detection physics for landmines
    - Cold-atom quantum methods with potential applications in quantum sensing and communication
Fiscal Year 2024 MURI

- Solicitation in 2023 for proposals in 25 topics of strategic importance to DoD.
- 276 white papers were submitted. After merit review by a panel of experts, 102 were invited for proposal submissions, from which the final 30 awards were selected.
- On the average award amount was $7.5M over five years ($1.5M per year). In total $221M was awarded to support 30 teams across 73 US academic institutions
  - Across 6 out of the 25 topics, 7 teams out of the 30 selected to receive $9M over five years specifically to support the participation of historically Black colleges and universities and minority-serving institutions (HBCU/MIs).
- This year, the University of Maryland (UMD), College Park was the lead awardee on 2 out of the 30 teams (ONR, AFOSR) and a sub-awardee on 3 other teams (ONR).
- UMD has a history of receiving the prestigious URI and MURI Awards
ONR Sponsored 2024 MURI Award to UMD

ONR: FOA Number: N00014-23-S-F003

Topic 4: (ONR) Complexity Science Disorder-Promoted Synchronization

Disorder-Influenced Collective Dynamics of Nonlinear Oscillator Systems; $9M over five years (2024-2029)

The overall goal of the proposed five-year effort is to develop a comprehensive framework informed and enabled by dynamical systems theory, experimental investigations, and brain-inspired computing paradigms, for understanding the interplay amongst parameter disorder, delay, and noise in a wide range of oscillator and waveguide arrays and harnessing disorder-influenced collective dynamics in nonlinear networks.
ONR Sponsored 2024 MURI Award to UMD

Disorder-Influenced Collective Dynamics of Nonlinear Oscillator Systems; $9M over five years (2024-2029)

The overall goal of the five-year effort is to develop a comprehensive framework informed and enabled by dynamical systems theory, experimental investigations, and brain-inspired computing paradigms, for understanding the interplay amongst parameter disorder, delay, and noise in a wide range of oscillator and waveguide arrays and harnessing disorder-influenced collective dynamics in nonlinear networks.

**UMD-SDSU-UCI-UCLA Team:** 6 faculty members, 8 graduate and 4 undergraduate students, and 3 post-doctoral researchers.

**UMD:** 3 faculty members from Mechanical Engineering and Mathematics, 5 graduate students, and 1 post-doctoral researcher

Total Direct Costs Over 5 Years: ~$7.38M; Total Indirect Costs: ~$1.62M; UMD Portion of Budget: ~$4.82M
ONR Sponsored 2024 MURI Award to UMD

Disorder-Influenced Collective Dynamics of Nonlinear Oscillator Systems; $9M over five years (2024-2029)

Networks of Sensors
Gyroscopes to Multi-functional Sensors

Energy Harvester Arrays

Networks of Precision Timing Devices

Brain-Inspired Network Models

Network of Oscillators:
Disorder & Collective Dynamics

\[ \frac{dx}{dt} = f(x, \lambda) \]
\[ dq = b(q)dt + \sqrt{\epsilon} G(q) dW(t) \]

Networks of Mechanical Oscillators
Turbo Fans to Engines to Launch Systems

Networks of Josephson Junctions
Miniaturized Antenna Design
MURI Interactions and Impact

- Research outcomes that can benefit a wide range of systems and DoD applications (optical sensing systems, coupled inertial navigation sensor systems, precision timing systems, chip scale nano-photonic devices, fluxgate magnetometers, and communication devices)
- Student and Post-doctoral Researcher Training
- Curriculum and facilities development that will impact education of undergraduate and graduate students

- DoD Labs Interested in Interacting on this Work: ARL, Adelphi, MD; NSWC, Carderock, MD; NIWC, San Diego, CA; NSWC, Corona, CA
- Industry Interested in Interacting on this Work: Northrop Grumman, CA
The End
Piezoelectric Control of Quantum States in Solid-State Defects (PIQS)

Edo Waks
Department of Electrical and Computer Engineering, Joint Quantum Institute

University of Maryland College Park, Joint Quantum Institute
Solid-state qubits enable scalable quantum technology


Crook et al., *Nano Lett.* **20**, 3427 (2020)

These are spin qubits in SiC (for Edo)
Solid-state qubits should satisfy two requirements

**Optical properties**
- High Brightness
- High optical coherence

**Spin properties**
- Long spin coherence times
- High temperature operation

Exciton in Epitaxial quantum dots

Atomic defect In crystals
The PIQS program

- Use electromechanical force to engineer and control defect properties
- Achieve ultra-high density arrays of solid-state spin qubits
- Device integration with nanophotonic and nanomechanical structures for quantum transduction
The Team

Jon-Paul Maria
Lane Martin
David Awchalom
Edo Waks
Jim LeBeau
Giulia Galli

Material Growth
- High purity PVD
- MBE

Characterization
- Spectroscopy
- Electron microscopy

Theory
- High throughput computational search
PIQS will create spin hosts atomically interfaced with electro-mechanical actuators

**Component Materials:** CeO$_2$ (spin host), Ferroelectric perovskites (high strain), AlN (high frequency)

<table>
<thead>
<tr>
<th>Piezo-I: FE &amp; AFE perovskites, Research intensive material identified by <strong>Martin</strong> group</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMN-PT PbHfO$_3$</td>
</tr>
<tr>
<td>Record-setting piezo-strain, broad solid solution space to minimize lattice mismatch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Qubit Host: CeO$_2$, Research intensive material identified by <strong>Galli</strong> group</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCC sublattices structures</td>
</tr>
<tr>
<td>$^{140}$Ce &amp; $^{142}$Ce comprise 99% natural abundance with 0 spin, CeO$_2$ also strong electrostrictor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Piezo-II: Al$_{1-x}$M$_x$N Commodity material available, via <strong>Maria</strong> group</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIBN A1ScN etc...</td>
</tr>
<tr>
<td>GHz actuation/oscillation, High mechanical Q, Near-RT synthesis</td>
</tr>
</tbody>
</table>
Our team will combine optical and electron microscopy to characterize spin qubits with atomic precision.
Future vision: Ultra-compact nanoelectronic and nanophotonic quantum devices
Thank You!
3. MOMENTUM FUND

MINNOWTECH Update
Ken Malone
WE MEASURE SHRIMP
If you think Gulf of Mexico, then you’re 20 years behind

Today, >$50 billion raised on farms in SEA, India, China, LatAm, MidEast
SHRIMP ARE NOT EASY TO MONITOR

Shrimp thrive in murky water.

Add in aeration, and it is impossible to see below the surface.

Current monitoring methods are inaccurate.
We use sonar to “see” shrimp where others can’t and estimate biomass at >95% accuracy.
SOLVING THE BIG PROBLEMS IN A GROWING INDUSTRY

$53.91 billion shrimp market in 2021
>6.81 million MT of shrimp in 2020
Production growing at 5.3% annually

Value Propositions

- Reduce the 65% cost of feed
- Larger Shrimp Capture a Higher Price
- Early detection to avoid 18% annual loss by disease
- Timing harvest to match weekly price swings and processor capacity
Before

- This farmer is estimating the size and count of his shrimp using a *cast net*.
- The farmer accuracy is inconsistent and inaccurate (50-75%) making it difficult to *track mortality, predict yield and titrate feed*.
- Losses from unfed shrimp and uneaten food are high.

After

With Minnowtech’s system (95% accuracy) farmers optimize the efficiency of their farm by *titrating feed, predicting yields* and checking for *unexpected mortality*.

**Titrating feed for an average 3 month shrimp pond cycle in Ecuador**

<table>
<thead>
<tr>
<th>Net Accuracy</th>
<th>Minnowtech Accuracy</th>
<th>Feed Error</th>
<th>Per Pond Gains and Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>75%</td>
<td>95%</td>
<td>Underfeeding</td>
<td>$20,000 gained with fed shrimp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overfeeding</td>
<td>$20,000 savings in uneaten feed</td>
</tr>
</tbody>
</table>
WE EXIST BECAUSE OF USM

Suzan Shahrestani  
PhD Fisheries Science  
UMCES

Connected and funded through IMET’s REEF Program

To her co-founders at Early Charm

++++ MIPS Funding and Two Rounds of Momentum Fund
• NSF SBIR Phase I and II Funded with Supplementals
• HATCH Global Aquaculture Accelerator Pre-Seed Funding
• Seed investment
  OTAQ marine hardware company
  HATCH
  Momentum
• Series A investment
  Propel Fund
  Abell Foundation
  TEDCO
  Momentum
  HATCH (pending)

• Sales in Australia, Ecuador, Vietnam, Indonesia and France
4. VENTURE DEVELOPMENT

Investment Funds, Major Resource Centers, and Economic Development Programs – 3-15-2024 Retreat Highlights
Support Growth in Research and Development through Diversification of Funding Sources, collaboration approaches, and stakeholder engagement

Identify and pursue strategic funding opportunities

Foster and develop research collaborations

Advancement of cross-cutting efforts:
- Providing technical support
- Strategic and poisoning planning
- Development of frameworks for collaborative initiatives
- Cultivating innovation ecosystem

Strengthen technology transfer and commercialization

Enhance philanthropic support for R & D
Framework for USM Alignment related to venture investments and program development

- **Programs generating ventures**: Basic and applied research, educational collaborations
- **Entrepreneurial Programs**
- **Industry Partnerships**

- **Resources Accelerating Commercialization**: Grant funded initiatives
- **Workforce Development Initiatives**
- **University sponsored programs**

- **Capital and Infrastructure**: Investment Funds
- **Research Parks & Incubators**
- **Technical Assistance**
Investment Funds, Major Resource Centers, and Economic Development Programs

- Convened ecosystem of funds and programs to identify alignment, gaps, challenges
- Discussed planned report on strengths and opportunities, gaps, and value proposition
- Identified resources of value to clients of funds
- Sought feedback on how to develop culture of support for the startup communities served by USM
- Discussed how to connect the pipeline(s) between basic and applied research and commercialization
- Identified strategies to improve communications related to USM successes
Funds and Major Resource Centers Represented

Salisbury University Shore Hatchery
https://www.salisbury.edu/academic-offices/business/shore-hatchery/

USM Launch Fund
https://www.usmd.edu/launch/

Towson University StarTUp Accelerator
https://www.towson.edu/startup/accelerator/

Maryland Industrial Partnerships (MIPS)
https://mips.umd.edu/

Maryland Innovation Initiative (MII) (USM Institutional Reps)
https://www.tedcomd.com/funding/maryland-innovation-initiative

Baltimore Fund
https://www.umventures.org/about-us/initiatives/the-baltimore-fund

Discovery Fund
https://innovate.umd.edu/resources/discoveryfund

Momentum Fund
https://momentum.usmd.edu/

Dingman Center Angels
https://www.rhsmith.umd.edu/centers-initiatives/dingman-center/initiatives-programs/dingman-center-angels

Chesapeake Bay Seed Capital Fund
https://www.cbscf.umd.edu/
### Review of fund characteristics and distribution

<table>
<thead>
<tr>
<th>USM Capital</th>
<th>Applicant Affiliation Required</th>
<th>USM Eligibility</th>
<th>Year Formed</th>
<th>Inst Administering</th>
<th>Funding Source</th>
<th>Approx. Total Annual Deployment</th>
<th>Approx. New Companies Per Year</th>
<th>Form of Capital</th>
<th>Geographic Restriction</th>
<th>Tech/Industr Focus</th>
<th>Stage of Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>SU Shore Hatchery</td>
<td>-</td>
<td>All USM</td>
<td>2013</td>
<td>SU</td>
<td>Private Philanthropic</td>
<td>$200k</td>
<td>12</td>
<td>Non-dilutive</td>
<td>Mid-Atlantic</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>USM Launch Fund</td>
<td>USM</td>
<td>All USM</td>
<td>2023</td>
<td>USM</td>
<td>USMO</td>
<td>$200k</td>
<td>15</td>
<td>Non-dilutive</td>
<td>Maryland Only</td>
<td>All</td>
<td>Early</td>
</tr>
<tr>
<td>TU StartUp Accelerator</td>
<td>-</td>
<td>All USM</td>
<td>2020</td>
<td>TU</td>
<td>A Mix of County, Private, and State</td>
<td>$150k</td>
<td>12</td>
<td>Non-dilutive</td>
<td>Attend In-Person at Towson</td>
<td>All</td>
<td>Ready for or Early Market Entry</td>
</tr>
<tr>
<td>Maryland Industrial Partnerships (MIPS)</td>
<td>-</td>
<td>All USM</td>
<td>1987</td>
<td>UMCP</td>
<td>UMCP administers but all MD public insits participate as research partners</td>
<td>State (Various)</td>
<td>$1.3M</td>
<td>25</td>
<td>Non-dilutive (in-kind)</td>
<td>Maryland Focus</td>
<td>All</td>
</tr>
<tr>
<td>Maryland Innovation Initiative (MII)*</td>
<td>UMCP, UMB, UMBC, pilot: FSU, BSU + Morgan and JHU</td>
<td>UMCP, UMB, UMBC, FSU, BSU</td>
<td>2012</td>
<td>TEDCO plus eligible institutions</td>
<td>State (TEDCO + Insts, Legislated)</td>
<td>$2.5M*</td>
<td>3</td>
<td>Non-dilutive and Dilutive</td>
<td>Maryland Only</td>
<td>Tech</td>
<td>Early</td>
</tr>
<tr>
<td>Baltimore Fund</td>
<td>Public Inst of Higher Ed</td>
<td>All USM if locating company in Baltimore City</td>
<td>2017</td>
<td>UMB</td>
<td>State (Legislated)</td>
<td>$2.5M**</td>
<td>10</td>
<td>Non-dilutive and Dilutive</td>
<td>Baltimore City Only</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Discovery Fund</td>
<td>-</td>
<td>All USM if locating company in Prince George's County</td>
<td>2021</td>
<td>UMCP</td>
<td>State (Legislated)</td>
<td>Up to $1M</td>
<td>4-5</td>
<td>Non-dilutive and Dilutive</td>
<td>Prince George's County Only</td>
<td>Tech</td>
<td>&quot;Seed&quot;</td>
</tr>
<tr>
<td>Momentum Fund</td>
<td>USM</td>
<td>All USM</td>
<td>2016</td>
<td>USM/UMB</td>
<td>State (USMO)</td>
<td>$2M</td>
<td>5</td>
<td>Dilutive</td>
<td>Maryland Only</td>
<td>All</td>
<td>&quot;Seed&quot;</td>
</tr>
<tr>
<td>Dingman Angels</td>
<td>-</td>
<td>All USM</td>
<td>2005</td>
<td>UMCP</td>
<td>Individual Angels</td>
<td>***</td>
<td>10</td>
<td>Dilutive</td>
<td>Mid-Atlantic</td>
<td>All</td>
<td>&quot;Seed&quot;</td>
</tr>
<tr>
<td>Chesapeake Bay Seed Capital Fund</td>
<td>-</td>
<td>All USM</td>
<td>2008</td>
<td>UMCP</td>
<td>State (MD Dept Natr Res)</td>
<td>$200k</td>
<td>2</td>
<td>Dilutive</td>
<td>Maryland Only</td>
<td>Improve air or water in Chesapeake watershed</td>
<td>&quot;Seed&quot;</td>
</tr>
</tbody>
</table>

### In Development - Sector-Focused

<table>
<thead>
<tr>
<th>Fund</th>
<th>Description</th>
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<tbody>
<tr>
<td>Terrapin Fund</td>
<td>Algal bloom fund (UMCES)</td>
</tr>
<tr>
<td>Tiger Fund</td>
<td>REEF Fund (UMCES)</td>
</tr>
<tr>
<td>Founder's Fund</td>
<td></td>
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</tbody>
</table>

### Notes
- Approximate annual deployment and new companies supported per year are estimates. Year-to-year variation occurs due to a number of factors.
- * Also open beyond USM; total budget is more like $5M+, with at least half to USM institutions
- ** Some funding may be provided to infrastructure-enabling projects
- *** Each angel decides independently whether or not to invest
Examination of funds provided to ventures supported
Meeting Insights

Reflections on Funding Portfolio Represented
- Recipients are geographically disbursed but still gaps
- Some capital sources have more overlap in portfolio than others
- Value in capturing USM investments across the system

Need to Communicate Resources and Success
- Metrics as well as startup stories provide insights related to impact
- Success and outcomes tracked in differing ways for each fund
- Value in telling individual fund and collective USM story and celebration of successes

Connecting
- Value in regular convening of USM Funds and Major Resource Centers can support fund and program clients and benefit from USM resource and technical assistance
- Value in addressing challenges of individual fund and program advocacy through more integrated and collective approach
- Convening and celebrating innovators and startups at a System level could be powerful and would not weaken any institutional efforts
Defining success and next steps

Potential Successes

- Fund leaders may review impacts and access of the programs they individually lead
- Funds may develop systems for tracking jobs and businesses created in Maryland supported by their investments and technical assistance
- Fund information can support efforts to attract additional investments and improve access to local, state, and federal programs
- Need for decision making tools to provide the right capital at the right time
- Layering support across multiple USM resources may fill gaps in the Maryland startup and venture development ecosystem

Examples of USM Highlights:

- 228 have received significant funding from one or more funds represented at retreat since 2018
- 80% of those startups received $50k or less, 50 received more, up to $1M
Defining success and next steps

Next Steps

- Connect with other USM support providers
- Develop a narrative report
- Understand gaps in the USM ecosystem
- Develop regular cadence of meetings of fund and program leaders
USM Convened Groups

- **Research and Economic Development Partners** - USM OVCREDS's largest group/convening; including USM professionals in the fields of research strategy and development, grants administration, commercialization, economic development, workforce development, and more to connect, collaborate, learn, and plan. All institutions participate.

- **Research and Economic Development Community of Practice** - Development professionals from universities or centers with growing entrepreneurial ecosystems. BSU, SU, UBalt, UMES, FSU, UMCES, and CSU participate.

- **System Research Administrators Group** - Sponsored Programs pre-award and post-award representatives to exchange information and ideas, collaborate on those issues which impact grant administration, and share best practices to support research and scholarly activities; supports all institutions.

- **COI Leaders** – Administrators of research COI professionals from research universities, supports all institutions.

- **Funds and Major Resource Centers Leaders** – Leaders of venture funds, investment programs, and technical support programs for research commercialization, innovation, and startup initiatives, supports all institutions.
Contact OVCRED

Michele Masucci, Ph.D.
Vice Chancellor for Research and Economic Development
mmasucci@usmd.edu
215-704-2739

Lindsay Ryan (she/her)
Interim Executive Director of Economic Development
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410-409-2236

Mike Ravenscroft
Managing Director, Momentum Fund
University of Maryland, Baltimore
mravenscroft@usmd.edu
410.706.3361

Matthew Jenkins
Administrative Assistant II
OVCRED - USM
mjenkins@usm.edu
OFFICE OF THE VICE CHANCELLOR FOR RESEARCH AND ECONOMIC DEVELOPMENT

MEMORANDUM

TO:   Members of the Committee on Economic Development and Technology Commercialization

   Isiah Leggett               Yehuda Neuberger
   Kevin Anderson             Ellen Fish
   Anwer Hasan                Michele Masucci
   Robert Hur                 Josiah Parker
   Robert Rauch               Linda R. Gooden, ex officio

FROM:   Michele Masucci, Vice Chancellor of Research and Economic Development

DATE:   March 29, 2024

RE:     Meeting of the Committee via Video Conference

The Committee on Economic Development and Technology Commercialization of the USM Board of Regents will meet in public session via video conference at 1:00 p.m. on Friday, March 29.

The agendas and supporting materials will be available on Nasdaq Boardvantage for members of the Board and the USM website at https://www.usmd.edu/regents/agendas/.

Zoom details will be provided to the Regents prior to the meeting.

Public webinar access is provided here: https://usmd-edu.zoom.us/j/97542378880. Public listen-only access is provided at +1 301 715 8592, room ID code 975 4237 8880.

cc: Other Members, Board of Regents
    Office of the Attorney General
    Chancellor’s Council
    Vice Presidents for Administration and Finance Office of Communications
    VCAF Managers