



The Board of Regents Committee on Economic Development and Technology Commercialization

Minutes of the Public Session

February 10, 2020

The Committee on Economic Development and Technology Commercialization of the University System of Maryland (USM) Board of Regents met in public session on 12:30 pm on Monday, February 10, 2020 at the University of Maryland, Baltimore. Regent Rauch called the meeting to order at 12:30 pm.

Regents present were R. Rauch (vice chair), L. Gooden (ex officio), G. Attman, E. Fish, B. Gossett (teleconference), S. Malhotra, K. Schulz, and R. Wallace. USM personnel present were J. Perman, T. Sadowski, L. Ryan, M. Lurie, E. Herbst, T. McDonough, J. Boughman. Others present included K. Porter, P. Ribolotto, M. Morris, L. Locascio, C. Broido Johnson, J. Shaab, D. Irani, N. Lamba, J. Lenzer, J. Hughes, and D. Drake.

Featured Start-Up: ARMR – Chibueze Ihenacho, CEO (Information Item)

Vice Chancellor Sadowski presented Chibueze Ihenacho, CEO of ARMR Systems, which is located in the UM BioPark. Mr. Ihenacho introduced ARMR Systems, which addresses pre-hospital trauma. He described existing tourniquets and their limitations. Even second-generation tourniquets developed recently require a medic, are bulky, and are inaccessible. He demonstrated a prototype of their device, a universal tourniquet. He described their market potential, including their starting market of special ops military units and extension to first responders, disaster relief, and industrial safety. Mr. Ihenacho described early partnerships validating the technology and relayed that they have captured \$1.4M through contracting vehicles. He expressed gratitude to the UM BioPark team in setting up shop and home here in Baltimore over the past few years. He thanked the Momentum Fund and said the interest they helped garner has led to an oversubscribed round. Next steps include FDA approval and continuing the technical and sales team. They are also looking for more manufacturing partners here in Maryland. Organizations such LaunchPort have been great, but they are still looking for more manufacturing partnerships. The company is excited to build on the initial device as a platform, integrating more advanced technology such as sensors.

Regent Wallace asked if the technology could be applicable to traumatic injuries in Baltimore. Mr. Ihenacho said that the device would look different, but they are heading that direction, starting with local law enforcement, for example.

Regent Schulz asked if they had contacted Maryland National Guard. Mr. Ihenacho stated that they have not yet but would be interested in speaking with them.

Regent Gooden suggested asking their advisors about other ways of working with the government such as via OTAs that can help cut through red tape.

Chancellor Perman asked Mr. Ihenacho about the benefits of being adjacent and having relationships with a university. Mr. Ihenacho said that they have worked with several different academic partners. In

Baltimore, access to world-class trauma experts has been extremely valuable. He has also gained from networking with CEO peers, especially as a CEO who is new to the region. Finally, ARMR Systems is increasingly looking for co-investigators, for which their university ties will be helpful. Mr. Sadowski commented that Mr. Ihenacho mentioned two other markets against which Maryland is often compared. Mr. Sadowski said it is important to tell the story of Maryland impact and competitiveness and that the USM wants to help tell those stories. Secretary Schulz added that companies like ARMR generate positive impacts for ancillary industries in the supply chain.

Chesapeake UAS Corridor Initiative – Matt Scassero, Director, University of Maryland UAS Test Site (Information Item)

Matt Scassero, University of Maryland UAS Test Site Director, described the Chesapeake UAS Corridor, which will be a drone corridor leveraging the Chesapeake Bay. Initially, research and public safety will be a focus because they can be launched quickly, but commercial applications will be central moving forward. The initiative has many stakeholders; several industry members are companies that are setting the pace for UAS despite not existing more than 5 years ago. Other states have funded these types of activities with significant state dollars. One goal will be flying unmanned systems in the same airspace as manned systems. Flight over people is a great challenge as well. The UAS test site already has a good track record of working with the FAA. Mr. Scassero described how they will bring different projects and partnerships together in order to meet the challenges and leverage the technology that has already been developed. Everyone at a recent stakeholder meeting agreed that the University of Maryland UAS Test Site should take the lead on the initiative. Mr. Scassero thanked the Maryland Department of Commerce has agreed to fund a portion of the initial feasibility study. Mr. Scassero said the group is looking at a legislative package and commercial interest to continue to develop the initiative. Universities have already discussed in-kind contributions, and a federal delegation was recently briefed. Mr. Scassero said that revenue may be generated, too, they must be careful about charging for use of the corridors because the FAA is very sensitive to charging anyone to rent airspace. Mr. Scassero mentioned that the startup MissionGo focuses on medical applications of unmanned crafts and is also interested in being involved.

Regent Malhotra asked why Volpe, which drives engineering for the FAA, is not involved. In particular, Regent Malhotra said that other states seem further along, and Volpe was a common thread. Mr. Scassero responded that the FAA works with Volpe on issues like aircraft standards and regulations and would likely be involved at a later stage. Regent Malhotra encouraged Mr. Scassero to consider incorporating Volpe in conversations early.

Regent Malhotra asked about counter-UAS work. Mr. Scassero responded that Maryland is not as involved with counter UAS, though it will be important generally moving forward.

Secretary Schulz commented that as she continues to hear about this initiative, it continues to move in a positive direction. Secretary Schulz said that these advancements are critical to local regional airports in supporting economic growth and development.

Mr. Sadowski commented that legislation has been introduced to build on the good work of the universities and to leverage partnerships, much like the Momentum Fund has done.

The Institute for Cyber Resilient Energy-Efficient Manufacturing (CREM) – Donna Ruginski, Executive Director for Cybersecurity Initiatives and Nilanjan Banerjee, Associate Professor at University of Maryland, Baltimore County (Information Item)

Donna Ruginski previously said that improving competitiveness of United States manufacturing is critical, and that digital technologies can help but also introduce vulnerabilities. The goal of CREM is to produce a robust framework, including workforce training. CREM has established a partner network of over 60 partners from 13 states. They will focus on secure automation, securing the global supply chain, and workforce development. The business model ties revenue to services. Small businesses will be spun off the institute, with help from TEDCO and the bwTech business park and incubator. The leadership team includes experts with outstanding experience in the federal government. They are pursuing funding opportunities with the U.S. Department of Defense and the U.S. Department of Energy. Mr. Banerjee spoke about technical aspects of the work. One of the key components will be education and workforce development. They are proposing short courses that can immediately educate people about cybersecurity in manufacturing.

Regent Gooden asked about legacy systems, to which Mr. Banerjee responded that they are taking this into account. Regent Malhotra commented about the difference between the many small manufacturers and the large manufacturers and asked how they plan to engage those many smaller companies, such as those in Maryland that may be manufacturing ARMOR Systems' technology, for example. Mr. Malhotra stated further that the supply chain is so interconnected, with the largest companies using extremely small manufacturers for certain components. Mr. Banerjee responded that CREM includes many small manufacturers in addition to medium and large companies. The idea of the consortium is to bring in the brainpower of everyone to provide solutions for small and medium manufacturers. He added that the weakest link is where people would attack the supply chain, and the architecture tries to address that.

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

Vice Chancellor Sadowski said that the initiatives presented are great examples of how our universities are heads up, establishing vast partnerships. Mr. Sadowski reviewed the Momentum Fund and said that next meeting will include highlights of operating principles and governance that the Managing Director, Ms. Broido Johnson, has created. He added the Ms. Broido Johnson continues to expand the top of the funnel, getting out and speaking with all 12 institutions and as many entrepreneurs as possible.

Ms. Sadowski spoke about a recent Maryland Quantum Alliance event in Annapolis. Ms. Lori Locascio said that the partners for the Alliance are wide-ranging, with universities in Virginia even singing on in recognition of Maryland's powerhouse in quantum computing. The investment in this area is broad already, and deep. The goal is to make sure Maryland stays in a leadership as quantum technology becomes increasingly important nationally.

Mr. Sadowski said that we have made terrific strides in a short period of time in collaborating with Amazon at multiple levels and from different perspectives.

Mr. Sadowski said that even more institutions are now partnering on the Greater Washington Partnership and that USM has gone from a partner at the table to a leader in a short period of time, in large part due to the efforts of MJ Bishop and USM's Kirwan Center for Academic Innovation. He commented that USM is looking at what the customer needs, with the Greater Washington Partnership as a great partner in that but not the only customer.

Mr. Sadowski said that USM has been working with the governor's office on the Technology Infrastructure Fund and that now there is a companion bill. Regent Schulz said this is a prominent economic development bill for the Governor and that they were disappointed last year that it did not pass. They have increased interest and partnership this year so are hopeful. The approach is to discuss what the program should look like before discussing funding. Mr. Sadowski explained that the Maryland Technology Internship Program has seen much success and that in addition to some legislative tweaks, the USM is still looking for more ways to increase funding to the program. There are also two bills that address SBIR/STTR assistance and incentives. Last, Mr. Sadowski said the USM has been collaborating with Commerce to provide support for the E-Novation bill. Secretary Schulz said that she visited some of the funded E-Novation programs before going to the table to defend that program. She was impressed and offers the Regents and anyone else to visit as well to see the impacts of the program in greater detail.

The meeting ended at 2:00pm.

Respectfully submitted,

Robert Rauch, Vice Chair
Committee on Economic Development
and Technology Commercialization