



The Board of Regents Committee on Economic Development and Technology Commercialization

Minutes of the Public Session

November 19, 2019

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 Tuesday, November 19, 2019 at the University of Maryland, Baltimore. Regent Leggett called the meeting to order at 12:34 pm.

Regents present were E. Fish, L. Pope, G. Attman, B. Gossett, I. Leggett, and L. Gooden. USM personnel present were B. Caret, T. Sadowski, L. Ryan, E. Herbst, D. Wilkerson, T. McDonough, and MJ Bishop. Others present were S. Sheppard, N. Lamba, J. Naft, L. Cassard, D. Irani, K. Porter, P. Ribolotto, M. Morris, J. Shaab, J. Lenzer, J. Hughes, and D. Drake.

Regent Leggett called the meeting to order at 12:34 PM and stated that he had the pleasure of visiting the University of Maryland, College Park recently and learned more about the coming transportation connections. He stated that he sees competition but also opportunity in Northern Virginia that will require cooperation among the System and support at the state level as well.

Featured Startup – Aimee Martin, CEO of BondTrue (Information Item)

Vice Chancellor Sadowski presented Aimee Martin, CEO of BondTrue, LLC, which was awarded a Phase II Maryland Industrial Partnerships (MIPS) grant and has been working with researchers at the University of Maryland, College Park.

Ms. Martin's husband, a surgeon, developed the device in his garage and patented the invention. Ms. Martin, with her extensive business background, wanted to get the invention to market in order to help patients. BondTrue's device addresses the problem of surgical site closure, which is an approximately \$10B problem. BondTrue's device also allows a single surgeon to close a wound, which is not currently possible.

The market is huge, even with just straight-line incisions. In Phase I of the MIPS grant, the graduate students and their advisor met with the clinician in an iterative process until it met the needs of the many surgeons who have looked at the device and described their needs. Aimee then showed the design evolution and how UMCP helped them get from balsa wood to a 3D printed prototype, including costs of goods sold models. The UMCP researchers received \$90,000 from the state, and BondTrue put in \$10,000 of their own money for each phase. Phase II includes proof of concept testing via a pig skin model. Ms. Martin showed videos illustrating how the device pushes the skin together and allows the stitching component to align perfectly correctly with the incision. The FDA suggested bundling the device in kits with 3 different staplers that are on the market, since BondTrue's device is stapler-agnostic. BondTrue are applying for grant and private funding and will be hiring soon, anticipating

product launch in 2022. BondTrue has applied for another MIPS grant to develop their second product and plan to continue developing products.

Ms. Martin met Joe Naft of the MIPS program through her network at TEDCO and others around Baltimore. The regional ecosystem, including the University System of Maryland, has helped them greatly, including the TEDCO's MD PACE program for high-quality, pro bono regulatory assistance. BondTrue loves interacting with the university and looks forward to hiring graduates in the future.

Regent Attman asked if the company is connected to UMB and whether resources like the cadaver lab could be useful. Mr. Hughes responded that he would be happy to make connections to any resources or other clinicians at UMB, while J. Naft can continue connecting BondTrue to resources at College Park. Mr. Hughes mentioned that locating in a USM incubator would also make the company eligible for the Momentum Fund.

University of Maryland BioPark Update – Jim Hughes, Senior Vice President and Chief Enterprise and Economic Development Officer, University of Maryland (Information Item)

Jim Hughes, Senior Vice President and Chief Enterprise and Economic Development Officer, University of Maryland, Baltimore provided an update of the success of existing UMB placemaking initiatives and the proposed plans for new buildings on Martin Luther King (MLK) Boulevard in downtown Baltimore.

Mr. Hughes explained that UMB is building spaces not only for startups but also for growing companies. Mr. Hughes relayed how 10 years ago, Marco Chacon brought a company with about 10 employees to the BioPark, and they were recently acquired for \$1.2B by Catalent. Catalent now has 4 locations in Maryland and over 500 jobs. Illumnia is launching its first performance center on the East Coast in the BioPark as part of the collaborative environment found at the BioPark.

Mr. Hughes described local development affecting the current campus and expanded plans. Lexington Market and Hollins Market will be redone. The first new Catholic school in decades will be in the vicinity, and a new residential facility (close to 300 apartments renting now), is open near the BioPark.

Mr. Hughes described the new development planned for MLK, 2 acres of land between Fayette and Baltimore Street, with plans to break ground in March of 2020. There are also plans to renovate the existing historic firehouse, which will likely hold a restaurant. Phase 2 will provide a second building at a later date. Mr. Hughes described the development plans which will incorporate innovation and conferencing spaces for programming and foster a collaborative entrepreneurial aesthetic. IT is anticipated that UMB will occupy some of the space to include some relevant Office of Research Development staff and other relevant entities. UMB welcomes all USM entities to locate similar offices there as well.

Regent Leggett asked if the City of Baltimore had invested in the project to which Mr. Hughes responded that the city worked with them to acquire some land, which allowed them to assemble a larger continuous parcel and to ensure that relevant RISE zones and other programs are available in the area. Regent Pope asked if there were estimates on when Phase II would occur to which Mr. Hughes responded that they will mostly likely wait until it is 80% leased. Regent Attman stated that there are so many great things happening in Baltimore driven by USM universities and that establishing a presence across MLK in West Baltimore is noteworthy. Vice Chancellor Sadowski added that at the recent Association of University Research Parks conference, they emphasized how much these types of projects are fueling company growth.

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

Vice Chancellor Sadowski reported that the latest Momentum Fund investments are Neoprogen and MinnowTech. The diversity of deals is coming along; for example, MinnowTech is out of UMCES. Neoprogen is led by Bill Niland, who led Harpoon Medical, which also was affiliated with UMB. The Fund is doing what it intended to do with better performance than expected. Mr. Sadowski noted that co-investing with Sanofi is a terrific sign and that Claire Broido Johnson is doing a great job expanding the top of the funnel. Regent Gooden asked how many jobs have been created, to which Vice Chancellor Sadowski replied that efforts at tracking that are underway, and Dr. Caret noted that the Fund is still a new initiative. Vice Chancellor Sadowski reported that the Advisory Board has grown and that a few people dropped off such as Ron Gula, who is still investing and collaborating with USM.

Vice Chancellor Sadowski reported that the Council of University System Presidents approved a proposal to become a strategic partner of the state-wide Open for Business campaign. Over 3 years, \$150,000 will be spent, shared among the institutions. Messaging from the institutions will be embedded within the campaign, for which the Maryland Department of Commerce, the organizing body, is glad.

Vice Chancellor Sadowski reported new traction on the Maryland Technology Infrastructure Fund and renewed focus on legislative champions for the effort. The goal of the Fund is to create a more competitive state-wide, innovation-driven economy and generate wealth creation to pay for other state needs via small state investments that attract private/external, non-state matching funds. Regent

Leggett asked Vice Chancellor Sadowski to explain what happened last year to which he responded that there was broad Senate support for the bill but they could not get the Ways and Means Committee in the House to vote on the deal; therefore, at the 11th hour, the bill did not move forward, and the \$16M designated from the governor's budget was taken up for other initiatives. Regent Leggett asked about the prospect for the coming session, to which Vice Chancellor Sadowski replied that Senator Bill Ferguson and Speaker Adrienne Jones understand these types of initiatives, which is encouraging. Dr. Caret added that they are working with Johns Hopkins University to position the bill well with the legislature. Regent Gossett stated that the addition of Johns Hopkins University and the Maryland Department of Commerce adds gravitas.

Vice Chancellor Sadowski reported that the RISE program potential isn't being fully realized and that he is hopeful for an amendment for tax credits for universities to not only buy down the cost of construction but also incentivize tenancy.

Dr. Caret added that The Maryland E-Innovation Initiative Fund (MEIF), administered by the Maryland Department of Commerce, has provided millions of dollars each year to retain or attract star faculty via matching money for endowments. UMCP and UMB as primary research institutions have been successful, in addition to other institutions such as Towson, and there may be action in the session related to it since it is due to sunset soon. Vice Chancellor Sadowski agreed that it is another great tool in the toolbox worthy of support.

Regent Gooden asked if anyone in the System is directly interfacing with Amazon and responsible for nurturing and growing that relationship. Vice Chancellor Sadowski replied that the System has attempted to track all activity, but that reporting from each USM institution has not been consistent or complete to date. Dr. Caret added that the site that UMCP has opened up will be the primary connection point for the System, with UMCP bringing other institutions to the table. In some ways, the USM dwarfs what Virginia does, and industry knows that. Regent Gossett asked if anyone would be hired to be a USM point person and Regent Leggett responded that the System has plans in the making that could consider incorporating such an element to address strategic corporate partnering opportunities. Vice Chancellor Sadowski cautioned that Amazon is just one company of many that should be considered.

Regent Gossett commented that it would be interesting to see where Momentum Fund companies started and where they are now, including bumps in the road and some who didn't make it.

Greater Washington Partnership – Capital CoLAB Project – MJ Bishop, Associate Vice Chancellor, Director, William E. Kirwan Center for Academic Innovation (Information Item)

Dr. Bishop stated that the Kirwan Center works at the intersection of learning sciences, technology, national re-thinking of higher education business models, and supporting institutions to move in those directions, too. They identify things that are working and scale those practices. They also engage in statewide practices to pursue funding and share best practices. One initiative is the strategic implementation of online learning; they are System-wide members of Edx, an online learning platform.

Dr. Bishop stated that today she will be speaking about credentials such as badges to connect the dots between curricular and co-curricular activities, considering human skills like problem-solving skills, leadership, etc. Digital badges are digital icons that can be placed on a student's LinkedIn page and act

like electronic portfolios, explaining the credibility of the badge issuer and what was done to obtain the badge. Recently, CISCO has helped develop problem solvers badges. Students on the campus engage with state-of-the-art equipment through this partnership, and lesson materials are aligning toward problem solver badges. GEICO has also expressed interest toward a leadership badge so that if a graduate leaves with a leadership badge, they are a shoo-in for entering the leadership program. Dr. Bishop stated that they are also engaging with NASA.

Dr. Bishop stated that alternative credentials have been gaining traction. Earlier this year, the Greater Washington Partnership spoke with the full board about looking at ways to make the Capital Region one of the best places to work and live. Recently, they launched the capital CoLAB and identified four credentials, one being Digital Generalist, which demonstrates digital competencies for anyone, including English Majors. There are also specialized Machine Learning, Data Analytics, and Cybersecurity credentials, which look a lot more like majors on USM campuses. The GWP has worked out a set of KSAs that the group of employers are looking for. Until recently, the Capital CoLAB project has been working with a tight set of universities; UMCP and UMBC have been involved. MJ spoke with Jason and his colleagues after the board meeting and asked if there was a role for the Kirwan Center to bring on the rest of the institutions. Dr. Bishop reported that they have been in conversations with the GWP for a couple of months and last Tuesday got the green light to bring the other USM institutions into the Capital CoLAB project. It will allow institutions to have greater reach without demanding much more staff time. Because much content will be online, they are excited about letting current employees engage with these as well. Dr. Bishop stated that the plan is to work with the institutions that would like to participate, focusing first on the Digital Generalist badge, then moving to the specialist badges, which the GWP is especially excited about. The Kirwan Center has promised to ramp up quickly and will work with Edx to see what content they have, in addition to developing online content. Dr. Bishop thanked Jack Seuss and UMBC for encouraging sharing that content among institutions and stated that at the end of this week, the Kirwan Center will send requests to the institutions for participants.

Vice Chancellor Sadowski agreed that there is need to scale up quickly. Non-USM institutions can provide these credentials, and some are acting quickly, but none can provide the depth and scale of what we can provide. Dr. Bishop added that the GWP was notably surprised and pleased by the Systemness.

Regent Gooden asked if the badges will be expressed on the transcript, to which Dr. Bishop replied that GWP credentials will be used in another pilot about a comprehensive learner record in order to facilitate their inclusion. Dr. Caret added that Business Higher Education Forum and Business Roundtable are also tied into the GWP because their needs are so great. For example, PWC hires 15-20k new employees a year.

Regent Leggett asked how commonality across different institutions and programs will be achieved and how important that is to industry. Dr. Bishop responded that with previous Kirwan Center efforts, they ensured the same set of outcomes and rubrics to make sure it meant the same things and regularly calibrate among themselves. The Kirwan Center plans to apply those methods to the GWP project as well, though they are not sure to what degree calibration is happening already in the GWP. Vice Chancellor Sadowski commented that this is one of the reasons why they wanted to bring Dr. Bishop into the conversation.

Partnering with Industry to Drive Innovation – Julie Lenzer, Chief Innovation Officer, University of Maryland, College Park and John Paul Sawyer, Director of Strategic Research Initiatives, University of Maryland, College Park (Information Item)

Ms. Lenzer reported that College Park has been working to become a better partner to industry and unleash innovation. Companies, startups, and interaction with people outside of the university are a big part of that; they are working to reduce the friction associated with these activities. Federal investments are going down, and the top research universities have a healthy, diverse portfolio. Companies want to outsource their R&D and are asking how to reduce that friction; UMCP is in fierce competition for their own faculty with the companies they are trying to work with. Ms. Lenzer added that students want experiential learning just as much as employers.

Ms. Lenzer stated that the top thing on the list for companies is talent recruitment, with some licensing interest. UMCP's industry-sponsored research is small compared to peers; however, they have a lot of potential and pilots underway to address this. Ms. Lenzer stated that companies want one "front door" for access to the university, but there can also be a sense of scarcity that counters the front door approach and reduces sharing company connections.

Ms. Lenzer showed newly developed options available for licensing intellectual property (IP) and stated that some simplified options are more of a signal because companies still want to negotiate terms. Master agreements allow UMCP to negotiate some sticking points, such as federal and state requirements that UMCP cannot compromise on. With a master agreement approach, a project can get approved in as quickly as 5 days with a scope of work. Mr. Sawyer added that IP options have been enormously helpful in starting out conversations regarding master agreements. Regent Leggett asked if there were standards across universities for this, to which Ms. Lenzer and Mr. Sawyer responded that there is no standard across the country or even in the USM, but that several models such as the Minnesota model, which UMCP adopted, have become standard.

Ms. Lenzer also explained that with technologies like AI and machine learning, they are seeing more open sourcing and companies having more leverage to require open sourcing. Thus, UMCP is shifting in some cases to cede a bit on the IP in front in favor of possibilities for a broader relationship. Ms. Lenzer commented that throughout it all, they are trying to be up front with term sheets and be transparent.

Ms. Lenzer continued that the Discovery District was seen more as an office park but not a bridge back into the University. Hiring an intern is not enough; they are trying to make those partnerships robust. Mr. Sawyer noted that the Purple Line is an important part of this; the message is that campus is almost doubling in size, and your company can be a part of it.

Ms. Lenzer and Mr. Sawyer described a strategic engagement pilot with Lockheed Martin, with a point person in each function across both large, complex organizations. Regent Gooden commented that USM needs this for Amazon, except across all institutions.

Ms. Lenzer stated that Amazon has an interesting model that engages faculty part-time during and summer months as an employee with Amazon stock, referred to as dual-employment. UMCP addressed any potential ethics concerns and obtained approval to partner in that way, which is good because this is the only way that Amazon would like to engage in that sense. However, not all details have been worked out, with some employees still on leave without pay at Amazon. Regent Gooden commented

that it seemed to be win-win for faculty and Amazon to which Ms. Lenzer replied yes and now they are looking at graduate students, because Amazon wants them, too, though the ethics are even more difficult to navigate. Regent Gooden asked about the difference between graduate student employment and interns, to which Ms. Lenzer responded that conflicts are more complicated for graduate student employment when research advisors are potentially involved. Regent Gooden said that she does not doubt that there are a lot of potential problems and that we should study it, to which Ms. Lenzer added that it is not just in relation to Amazon; it is Microsoft and others. Dr. Caret added that another challenge is faculty using the institution as the safety net and asking for leave of absence after leave of absence, even if limits are set.

When asked how the USM could be helpful, Mr. Sawyer replied that he appreciates the USM help they are already receiving; for example, Vice Chancellor Tom Sadowski has been helpful in navigating matching funds relationships, and Ellen and her team has been helping them track private use. Mr. Sawyer continued that additional assistance for things like database tools to track research strengths across the System would be useful and that a \$250,000 a year software program can help do things like narrow down 5 researchers across 3 institutions that are experts in an area of interest to an industry partner. Vice Chancellor Sadowski added that the USM Office of Economic Development holds quarterly meetings with the institutions and also recently addressed this issue of industry collaborations at that meeting.

Vice Chancellor Sadowski asked for the Committee to consider the minutes from the meeting of the EDTC on September 12, 2019. Regent Gossett put forward the motion to approve, and Regent Gooden seconded the motion. Regents Attman, Gooden, Leggett, and Gossett were in favor, with Regent Fish abstaining from the vote because she was not present at the September 12 meeting.

The meeting ended at 2:30pm.

Respectfully submitted,

Isiah Leggett, Chair
Committee on Economic Development
and Technology Commercialization