

UW SYSTEM BOARD OF REGENTS
Research, Economic Development, and Innovation Committee
June 8, 2012
UW-Milwaukee Union, Wisconsin Room
University of Wisconsin-Milwaukee
Milwaukee, Wisconsin

Vice President Smith presided over the Board of Regents' Research, Economic Development, and Innovation Committee, meeting as a Committee of the Whole during a recess of the full Board of Regents meeting. The meeting was convened at 10:55 a.m. Regents Bartell, Behling, Bradley, Drew, Evers, Falbo, Higgins, Hribar, Manydeeds, Millner, Pointer, Pruitt, Roberts, Smith, Tyler, Vásquez, Walsh and Whitburn were present. No Regents were absent.

UWM Research Partnerships and UWM Innovation Campus, Driving Regional Economic Development Through Partnerships

Vice President Smith indicated that the REDI Committee meeting would feature some of the important work that is being done at UW-Milwaukee, and turned to Chancellor Lovell to introduce the speakers.

Chancellor Lovell thanked Vice President Smith and introduced two speakers to describe some of the ongoing developments and initiatives at UW-Milwaukee: Brian Thompson, who leads the UWM Research Foundation, and David Gilbert, who leads the UWM Real Estate Foundation. Chancellor Lovell recalled that when he arrived to interview for the Dean of Engineering position at UW-Milwaukee in 2008, his very first meeting was lunch with Mr. Thompson and Mr. Gilbert. At the time, the year-old UWM Research Foundation had no licenses or patents, and the Real Estate Foundation did not yet own the land for Innovation Park, or have any buildings underway.

Chancellor Lovell remarked that when the Regents think about the upcoming presentation, what was accomplished in the last four years, and the way the University had moved forward and impacted the economics of the region, he believed they would be equally as proud as he is about the progress that UW-Milwaukee has made. He then invited Mr. Gilbert to come forward, to be followed by Mr. Thompson.

Mr. Gilbert thanked Chancellor Lovell and the Board of Regents for the opportunity to speak at the meeting. He stated that he and Mr. Thompson considered it a great privilege to show some of the work they were doing in support of UW-Milwaukee. He said that they would talk about the UWM family of foundations, and how they were building partnerships that would enhance the University's research portfolio and drive economic development for the region.

Mr. Gilbert introduced the UWM family of foundations. The UWM Foundation, which is a traditional university-related foundation with a mission to raise funds, manage endowments, disperse funds in accordance with donor wishes, and serve as an advocate and ambassador to the community, has existed since 1974. In 2005, after looking at how other university-related

foundations were supporting their public institutions, the UWM Real Estate Foundation was created to hold and develop real estate and facilities on behalf of the university. The following year, the UWM Research Foundation was created to address patenting and licensing, and to enhance the research portfolio and seed promising research at UW-Milwaukee. Mr. Gilbert explained that all three of these foundations are affiliated corporations, with the UWM Foundation appointing the boards and the directors of the affiliates, to ensure all are tightly aligned to the university and moving in the same direction.

UWM Real Estate Foundation: Mr. Gilbert explained that because the mission of the UWM Real Estate Foundation was quite broad, the organization can pursue any type of real estate or facility development that supports the university -- academic space, student residence halls, research space, research parks, etc. The Real Estate Foundation's first projects were new student residence halls. In 2005, the foundation purchased property near the Milwaukee River, approximately one mile from campus, and built Riverview Hall. Two years later, the foundation purchased more property on the other side of the river and built Cambridge Commons.

He indicated that at the time, there was some debate as to whether that was the best area to build new residence halls, as some thought it was somewhat transitional. However, since then the entire corridor has been activated with 1,200 students and the land has become so valuable that the city has increased the height limits so developers can build more retail, office, and other kinds of medical space there. He added that in the worst economic climate in a generation, the Real Estate Foundation was able to pump \$80 million worth of development into the city of Milwaukee, creating hundreds of construction jobs and dozens of permanent jobs for people who run the facilities.

Mr. Gilbert stated that the Real Estate Foundation was now focusing on a much more ambitious project, creating Innovation Campus. Referring to the architectural renderings of the campus, he explained that the project currently includes no roads and only one building, a historic building occupied by the County Parks Office. The idea behind the project is to create a public/private partnership at Innovation Campus, where industry, academia, nonprofits, other institutions of higher education, government labs, and different research entities can co-locate and collaborate. He explained that the Real Estate Foundation is trying to recreate what is referred to as a "third generation" research park.

Mr. Gilbert explained that "first generation" research parks occurred mostly before 1980, and were primarily real estate ventures led by developers. He explained that while these research parks had university names, the relationships with the universities were fairly limited. "Second generation" research parks were actually owned by or affiliated with universities, but there was no co-location of academia and industry partners. He stated that more recently, since the late 1990s, the "third generation" of research parks included industry and academia not only in the same park and the same buildings, but often in the same labs, working together and using each other's resources to generate more research and economic activity.

Mr. Gilbert referred to a map showing an aerial view of a portion of the city of Wauwatosa, approximately ten miles west of UW-Milwaukee, commonly known as Milwaukee County Grounds. He stated that the area important is because it includes the Milwaukee

Regional Medical Center, where some of UW-Milwaukee's most important partners are located - the Medical College of Wisconsin, Froedtert Hospital, Children's Hospital, Children's Research Institute, the Blood Research Institute, and others. He stated that this area is the center of clinical research in southeastern Wisconsin, and with more than \$200 million in clinical research it is a true academic medical center.

Referring again to the map, Mr. Gilbert also pointed out the nearby Milwaukee County Research Park, which is home to what may be the largest business incubator in the state and scores of other research oriented companies, providing a nexus of activity in the area. He explained that within the Milwaukee area, there is an independent medical college -- an academic medical center -- without a comprehensive research university, and a comprehensive research university -- UW-Milwaukee -- without an academic medical center. He indicated that this type of partnership is very important because it is necessary for today's research to be translational, going from the lab bench to the bedside to the marketplace. He and others believe that the Innovation Campus can have a significant impact in this area.

Turning to the map again, Mr. Gilbert pointed to 89 acres of nearby land, purchased by the UWM Real Estate Foundation for the Innovation Campus, saying that this would be the nexus of discovery and innovation in southeastern Wisconsin, leveraging the billions of dollars that have been spent at the Regional Medical Center and the commerce and activity occurring at the Research Park.

Mr. Gilbert referred to another map, explaining that it was a map of the Innovation Campus master plan and stating that the Innovation Campus was a very complex project and a complex piece of property. Although the UWM Real Estate Foundation owns the entire 89-acre parcel, the Wisconsin Department of Transportation would take 17 acres of the parcel to redo the I-94 Zoo Interchange, which will benefit the Innovation Campus by enhancing access. The parcel also includes some environmentally sensitive land, used by hundreds of thousands of Monarch butterflies that land on the property when migrating from Mexico to Canada. He stated that while it is not widely known, UW-Milwaukee manages 3,000 acres of the Cedarburg Bog, which would be preserved and enhanced for future generations.

The parcel also includes some historic buildings that have been abandoned for more than a dozen years. Mr. Gilbert stated that the goal of the Real Estate Foundation was to redevelop the buildings for residential use, consistent with the mantra of "live, learn, work, play." The foundation had partnered with a development group, the Mandel Group, which has been exploring ways to incorporate residential use, with a goal to save all the buildings and build infill buildings.

Pointing to other areas of the map, Mr. Gilbert stated that because environmentally sensitive development was important to UW-Milwaukee and the Real Estate Foundation, they had made a commitment to manage storm water in novel ways with bio-soils and other sorts of cutting-edge technologies. Pointing to another area on the map, Mr. Gilbert said that while no one likes parking decks, there will be a few parking decks on the parcel to accomplish the desired parking density.

Mr. Gilbert explained that the Innovation Campus would be broken into two parts, with the research and the commercial part on the lower end of the campus, where they plan to have tree-lined boulevards, quadrangle designs, with people walking through; it will be very public and densely developed, for a collegiate feel. The other part of the campus, in the environmentally sensitive area and the residential area, would have a more prairie-like, recreational feel.

Mr. Gilbert closed his portion of the presentation by showing a rendering of what would be the first building at Innovation Campus. He explained that they were fortunate to receive a \$5.4 million Economic Development Administration grant to build the building, which would be referred to as the Innovation Accelerator. The purpose of the building was to put faculty in a space where they can work with industry, providing space to help attract industry, or help it grow. He said that the building would be small, with 25,000 square feet, but it would have a significant impact in the way UW-Milwaukee faculty are able to interact with industry.

Mr. Gilbert then turned to Mr. Thompson to provide information regarding the faculty that would occupy the building and commercialization activities.

UWM Research Foundation: Mr. Thompson thanked the Regents for the opportunity to speak at the meeting. He started by explaining that the mission of the UWM Research Foundation complements the growth of research at UW-Milwaukee, as well as the commercialization of research, by fostering research and the discovery of ideas and innovation, and translating those ideas to the broadest possible audience, typically a few commercialization activities.

Mr. Thompson stated that with regard to economic development, the focus would be building on UW-Milwaukee's existing research strengths in terms of funded research. He stated that UW-Milwaukee has a research program of approximately a \$70 million, and the schools and colleges form the infrastructure of that program. He referred to a slide showing interdisciplinary research clusters. In the area of materials research, the work is carried out in engineering, chemistry, and physics. He explained that a commercial partner may not be interested in which academic department or college at UW-Milwaukee does the work, but instead is interested in knowing that the University is strong in the area of materials research.

Mr. Thompson provided detailed examples of UW-Milwaukee's research strengths related to materials, imaging and sensors, computer science information, gravity, and mathematical and atmospheric science programs. He also noted that in the health care area, UW-Milwaukee has broad strengths related to human movement science, disability and rehabilitation, accessibility, evidence-based nursing, behavioral work, aging, and addiction. Mr. Thompson detailed UW-Milwaukee's strength in the areas of neuroscience, chemistry and biosciences, environmental monitoring, and environmental systems. Referring back to UW-Milwaukee's \$70 million research program, he estimated that the materials area cluster is valued at approximately \$7 to 10 million, the health care cluster is valued at approximately \$11 million, and the chemistry and bioscience cluster is valued at approximately \$5 to 6 million.

Mr. Thompson explained that to leverage funds, the Research Foundation had created a catalyst grant program to seed promising projects that have both strong science, as well as

commercial potential. Local organizations, such as the Rockwell Automation Charitable Corporation, the Bradley Foundation, and the Herzfeld Foundation, have supported this program. The Research Foundation has made approximately \$2.7 million in grants focused on program outcomes. These outcomes are measured in various ways, including the generation of ideas, the validation of those ideas, and the development and commercialization of ideas.

Mr. Thompson provided more detailed information regarding the outcomes of the catalyst grant. With regard to the generation of ideas, the program outcomes include close to 70 scholarly publications, more than 80 invention disclosures associated with the program, 24 patent filings to date, and a half-dozen issued patents. In terms of the validation of ideas, Mr. Thompson stated that more than a dozen companies have taken the technologies in-house for further evaluation, which is one of the key steps in determining if a product can be launched. With regard to development, there has been an increase in small companies leveraging Small Business Innovative Research (SBIR) grants and other funds total \$7.3 million. Mr. Thompson added that program outcomes related to commercialization included five licensed technologies, and another seven option agreements for technologies that are under evaluation by companies.

Mr. Thompson provided an example of a catalyst grant program recipient, Dr. Valerica Raicu, a physicist at UW-Milwaukee who studies proteins and who developed a way to image multiple proteins. With the assistance of the Research Foundation and others, Dr. Raicu submitted a patent application, created a business plan, connected with investors, started a company, and created a product to market based on UW-Milwaukee technology.

Mr. Thompson stated that when he met Chancellor Lovell, the Research Foundation was just getting started. In 2006, the foundation's portfolio included only one patent application. Today, the portfolio included more than 50 patent applications, including nearly two dozen issued or allowed patents. He stated that the foundation also has copyrighted works being managed. The foundation is finding innovative ways to bring this technology to market, and also has a marketing effort to take licensed technologies to market. Mr. Thompson added the Research Foundation's portfolio also includes five UW-Milwaukee start-up companies that are working with the UWM Research Foundation licensed technologies, as well as additional start-up prospects that involve meetings with faculty, helping them with business plans, and connecting them with business leaders to help them build their companies. Mr. Thompson stated that the portfolio and the work of the UWM Research Foundation stands on the shoulders of the great research at UW-Milwaukee -- the researchers and the undergraduate, graduate, and post-doctoral students.

Mr. Thompson shared an example of how technologies develop from unlikely areas of research. Dr. Rhonda Montgomery, from the UW-Milwaukee's Helen Bader School of Social Welfare, studies the aging process and caregivers. He stated that oftentimes an aging individual is moved to a nursing home when the burden on a caregiver becomes too overwhelming. Dr. Montgomery developed a system for assessing the needs of caregivers and matching the caregivers to services in the community, thereby delaying the move to a higher level of care, such as a nursing home, and resulting in savings to the health care system. Dr. Montgomery has also shown that providing the right type of support to caregivers reduces their levels of depression and other issues which result in health care savings for caregivers. Mr. Thompson

said that Dr. Montgomery has developed an enormously valuable tool, and the Research Foundation is looking at how to get the tool to the market.

He also noted that Dr. Montgomery received a Rosalynn Carter Leadership in Caregiving Award for work she did with Washington State. Since then, more than seven license agreements for the technology had been completed, and the technology was being used in several other states. The technology developed by Dr. Montgomery was also licensed to a company that is taking it to an Internet platform, and Dr. Montgomery was looking at launching a start-up company to take the technology into another area, targeting the insurance industry. Mr. Thompson said that it had been an honor to work with people like Dr. Montgomery, and to see how this technology can really impact people.

Mr. Thompson said that one of the unique strengths of UW-Milwaukee was its location in the Milwaukee area, at the center of many great companies and other academic institutions. The Medical College of Wisconsin has great strengths in cardiovascular research, imaging, cancer, genomics, and microbiology. Approximately \$150 to 250 million in research strengths are clustered around the Medical College of Wisconsin, Children's Hospital, Froedtert Hospital, and the Veterans Administration. In addition, there are opportunities to partner with the Blood Center of Wisconsin, Marquette University, Milwaukee School of Engineering, as well as UW-Madison.

Mr. Thompson also provided several examples of how the foundation is working to make it easier for industry to connect with research strengths at UW-Milwaukee. His first example was the Water Equipment and Policy Center, jointly created by UW-Milwaukee and Marquette University using a National Science Foundation model that involves choosing and funding research projects in partnership with several companies. Mr. Thompson noted that UW-Milwaukee also partnered with UW-Madison, Milwaukee School of Engineering, Marquette University and several energy companies to form the Wisconsin Energy Research Consortium and fund research grants. He also mentioned the Medical College of Wisconsin's Clinical and Translational Science Institute, which helps to connect research in materials and sensing technologies occurring at UW-Milwaukee, to the health care industry. Mr. Thompson noted the research of Dr. Peter Geissinger and his colleagues to develop a technique to sense contaminants in waste water in response to a specific need identified by a company in the Milwaukee area. Another example was Johnson Controls, which challenged faculty members at UW-Milwaukee and UW-Madison to develop proposals to address needs specifically identified by the company. Johnson Controls has already funded six projects over multiple years.

Mr. Thompson said that in the center of all this activity was the Innovation Accelerator, previously mentioned by Mr. Gilbert. Mr. Thompson concluded his presentation with a video that showed the groundbreaking ceremony for the Innovation Accelerator. Mr. Gilbert then returned to the podium to thank the Regents for the opportunity to speak to them, and asked if anyone had any comments or questions.

Regent Bradley stated that a few years before, the state Legislature appropriated a small amount of money for the Wisconsin Genomics Initiative, involving the Marshfield Clinic, the Medical College of Wisconsin, UW-Madison, and UW-Milwaukee. He asked if the speakers

had any information on how UW-Milwaukee fit into the project. Mr. Thompson, although unfamiliar with the details of UW-Milwaukee's relationship to that project, added that the School of Fresh Water Science includes genomics as one of the cluster areas and strengths upon which it is building.

Vice President Smith thanked Mr. Gilbert and Mr. Thompson. The committee meeting was adjourned at 11:30 a.m.

Submitted by:

/s/ Jane S. Radue
Jane S. Radue, Secretary of the Board