UW SYSTEM BOARD OF REGENTS
Research, Economic Development, and Innovation Committee
April 13, 2012
Yellowjacket Union, Great Room
University of Wisconsin-Superior
Superior, Wisconsin

President Spector presided over the first meeting of 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 10:05 a.m. Regents Bartell, Bradley, Crain, Evers, Falbo, Higgins, Manydeeds, Pointer, Roberts, Sherven, Smith, Spector, Tyler, Walsh and Whitburn were present. Regents Drew, Pruitt, and Vásquez were unable to attend.

REDI Committee Background

President Spector started by explaining that a vital, substantive recommendation of the Ad Hoc Committee on UW System Board of Regents Roles and Responsibilities was that the Board create a standing committee focused on Research, Economic Development, and Innovation. The recommendation reflected the committee's conclusion that in a 21st century economy, the UW System institutions and researchers are at the forefront of scientific and technological developments.

President Spector stated that at this, the inaugural meeting of the Research Economic Development and Innovation (REDI) Committee, it was appropriate to highlight the purposes of the REDI Committee as envisioned by the committee that proposed its creation: (1) to raise the priority of the knowledge economy on the Regent topic list and signal the Board's recognition of the importance of the System's scientific and technical work in moving the state forward; (2) to highlight for state and local leaders the role and potential of UW System institutions in addressing the state's economic development challenges; and (3) to recognize that institutions from multiple sectors within the UW System are involved in important research and economic development work. President Spector noted that the first meeting of the REDI Committee would provide a special opportunity to highlight partnerships involving economic development.

Update on Economic Development Position

President Spector turned to President Reilly for an update on the search for an Associate Vice President for Economic Development.

President Reilly said that the UW System had long recognized the importance of the research that goes on at every one of the UW institutions, and the connection between that work and the economic viability of and quality of life in the state. He added that he thought that one of the things UW System had done right was connecting research to undergraduate education so that more undergraduates had opportunities to be involved in research.

In the past, the Board had opportunities to focus on this work through the Board's standing committees, as new proposals or emerging issues were taken up under the banner of research contracts, new facilities, or expanded graduate degree programs. The creation of the REDI Committee reflects the UW's increasingly important role in this area, and aligns with changes in the UW System staffing. He said that he has been working to create a new position in UW System Administration that will provide leadership for the economic development portfolio, with 50 percent of the position funded by the Wisconsin Economic Development Corporation (WEDC), reflecting a very strong university-state partnership that would help to address the needs of established industries, fledgling start-ups, and growing communities all over Wisconsin.

President Reilly noted that the search and screen committee for the position was underway, and included a broad mix of individuals representing economic development organizations in Wisconsin and UW institutions, and including Regent Higgins. President Reilly expressed thanks to Paul Jadin and WEDC for assistance in shaping the position, and for the joint funding. He added that the change to the Board's committee structure came at a very opportune time.

NorthWERD: A New Promise for Regional Education

President Spector introduced the committee's first presentation, "NorthWERD: A New Promise for Regional Education," led by the newly-inaugurated Chancellor Wachter, and Dr. Bob Meyer, President of the Wisconsin Indianhead Technical College.

Chancellor Wachter greeted the committee and stated that she was pleased to be able to make the first presentation to the REDI Committee. She said that it was a special time in northern Wisconsin, a "perfect storm" of events. For a long time, not much was happening on the economic development front for some communities, but with companies like Kestrel Aircraft coming in and possibly adding 600 new jobs, and with mining and some of the other activities taking place in Ashland and Bayfield, she said that it was an excellent time for northern Wisconsin. Chancellor Wachter also said that there was new leadership at many of the educational institutions, leading to a new vibrancy in terms of people wanting to get together and get things done. In addition, there was the push from legislative interest and the WEDC in cultivating economic development efforts.

Chancellor Wachter explained that NorthWERD, or the Northwest Wisconsin Educators for Regional Development, is an eight-member consortium of institutions serving K-20. She said that the group was explicitly motivated to bring institutions together to focus on economic development and economic research connected to education. She explained that the group is not only focused on economic development; there are also opportunities to be more effective and efficient in working together to create partnerships, articulation agreements, and "laddering" the steps from high school, to the technical colleges, to the university system to make the transitions as seamless as possible. She added that the efforts of NorthWERD should tie into other existing regional efforts and support other economic development agencies in a particular city or within the region.

Chancellor Wachter explained that the eight institutions are:

- UW-Superior;
- Northland College in Ashland;
- Wisconsin Indianhead Technical College (WITC), with multiple sites in Ashland, Hayward, Ladysmith, New Richmond, Rice Lake, Spooner, and Superior;
- Northland Technical College, with sites in Antigo, Medford, Phillips, Spencer, Wausau, and Wittenberg;
- UW-Barron County in Rice Lake;
- Lac Courte Oreilles Ojibwa Community College, with sites in Hayward, Lac du Flambeau, Washburn, and Webster;
- UW-Extension and the 16 counties that it serves; and
- CESA 12, which serves 17 school districts in six different counties.

Chancellor Wachter stated that the scope of the NorthWERD relationship included a combined enrollment of more than 45,000 students in K through 20, including full-time, part-time, graduate, undergraduate, public, private, and home-schooled students, with a significant potential impact for the northern part of the state. Chancellor Wachter then turned to Dr. Meyer to provide information regarding the origins and evolutionary path of NorthWERD.

Dr. Meyer thanked Chancellor Wachter and greeted the committee. He referred the Regents to a NorthWERD fact sheet that had been distributed to them. He explained that in 2008 at a technology conference in Ashland, he and others observed that there was an absence of regional economic development in the far northwest counties of Wisconsin, and an organization that could work with the economic development community could be very beneficial. He stated that as the Lake Superior chapter of the Wisconsin Innovation Network started pursuing regional economic development in northwest Wisconsin, he and others began looking at an organization that modeled Seven Rivers in southwest Wisconsin, or New North and NewERA in the Green Bay area.

Dr. Meyer said that while it took some time for the effort to gain traction, the Northwest Regional Planning Commission was now organizing a ten-county effort focused on regional economic development, and NorthWERD complements that effort. He explained that as the economic development group identifies needs for workforce development and programming, NorthWERD intends to respond to those needs. Dr. Meyer stated that a number of NorthWERD participants were present at the meeting including Julianne Raymond from the UW-Superior Small Business Development Center, as well as Peter Nordgren and Jerry Hembd from UW-Superior.

Dr. Meyer explained that the purpose of NorthWERD was to continue the conversations among northwest Wisconsin educators involved in strategic initiatives and collaborations for educational attainment and economic development. As an example, he mentioned that WITC had a two-year health information technology program, and the institution was always looking for ways to articulate to a four-year program. In addition, WITC had a two-year early childhood development program that now articulates to a four-year program at UW-Superior. He said that these are the types of initiatives the institutions want to pursue together.

Dr. Meyer referred to the next slide in his presentation, which described the vision of the NorthWERD founders. He explained that NorthWERD is trying to support economic development with respect to researching the market and identifying workforce needs, and by working together as educational institutions to co-program or develop pathways for students. He noted that CESA 12 is involved because NorthWERD wants to be very connected to high schools and middle schools.

Dr. Meyer then referred to a slide which described the NorthWERD Memorandum of Understanding, which states that organizations will facilitate educational partnerships with regional development groups in northwest Wisconsin, and facilitate further educational collaboration by leveraging collective resources. He said that these are difficult economic times, and educational institutions cannot do all the things they want to do, but the whole is greater than sum of the parts.

Dr. Meyer thanked those who were involved in selecting Dr. Wachter as Chancellor. He said that he thought it was appropriate that the theme of her inauguration was "Partnerships for Progress" as she is deeply committed to that, and all those who were involved with her selection did a fantastic job. He said that he and others are honored and feel fortunate to be able to work with Chancellor Wachter.

Chancellor Wachter indicated that the next part of the process was the challenging part, and that was to keep progress going. The formal signing ceremony of the Memorandum of Understanding was held in Hayward at the Lac du Oreilles Community College, and she believed that the media attention that made it a very visible event would help to keep it going.

Chancellor Wachter explained that the board for Vision's Northwest, the regional economic development group organized by the Northwest Regional Planning Commission, was being formed and NorthWERD would have formal representation on that board. This would provide a direct connection between economic development efforts and educational efforts. She said that while there are some questions about the funding of Visions Northwest, she promised that the educational institutions that form NorthWERD were committed nonetheless.

Chancellor Wachter stated NorthWERD had work groups in place that were ready to act, and she would be chairing the work group that meets in mid-June to respond to regional needs and economic development. Another work group will be focused on educational pathways and academic advising, and would be chaired by staff from WITC at Hayward. She said that NorthWERD planned to have quarterly meetings, with the work groups meeting monthly, and then have an annual meeting to elect officers.

Chancellor Wachter said that measuring the success of NorthWERD was an important issue and success can take many forms -- the number of graduates in the region or the number that actually matriculate into careers that are directly linked with the region. She said that having an influence on job readiness is very important to all the members of NorthWERD, so that will be a primary goal, along with acknowledgment that institutions are a major stimulus for job placement in the region.

Chancellor Wachter concluded the presentation by restating that it was an exciting time for northern Wisconsin and, while the model for NorthWERD might not be unique, the degree to which people in northern Wisconsin were having conversations and creating partnerships was. She offered to entertain any questions that Regents might have.

Responding to a question from Regent Higgins about how the System's new Associate Vice President for Economic Development would help NorthWERD meet its goals, Chancellor Wachter stated that having the person in that position serve as the focal point for coordination would be very important, as there were many moving pieces and it was a challenge to get one's arms around all of the groups that are working together. Dr. Meyer said that there were probably some opportunities to coordinate, as there are a lot of different groups involved, and identifying best practices would be very helpful for NorthWERD. In addition, having that position serve as a listening post regarding programming needs, helping to develop the programs, and encouraging partnerships would also be beneficial.

President Spector thanked the presenters for their presentation and their energy.

UW Comprehensives: A Resource for Economic Growth through Technology Development

President Spector introduced the next presentation, to be led by Dr. Maliyakal John, the Managing Director of the WiSys Technology Foundation.

Dr. John thanked the Regents for the invitation to participate in the meeting, and stated that it was a special honor. He also thanked the UW System leadership under President Reilly, and Vice President Debbie Durcan and General Counsel Tom Stafford for their close association with WiSys activities and guidance provided to WiSys. He also thanked Associate Vice President Stephen Kolison and his team for partnering with WiSys to develop grant programs on the UW campuses.

Overview of WiSys: Dr. John provided an overview of WiSys, which was formed in 2000 with a mission to undertake technology transfer at the UW comprehensive and two-year colleges, and started providing services in 2005. He said that WiSys was currently a five-person team serving approximately 110,000 students and 3,500 faculty members. He indicated that WiSys faces some unique challenges because technology transfer is not routine in undergraduate institutions. Dr. John identified several challenges, including the lack of resources, the lack of a research and development culture, and the lack of product ideas. He said that while the campuses have a large number of excellent scientists and scientific fields, they are not routinely focused on product development. He added that another challenge is that there is very little time for faculty to conduct research, because faculty are considered full-time teaching faculty.

Dr. John stated that of the 3,500 faculty members, almost 300 to 400 have unique technology skills that can be used to conduct research and development, and make products, and this is a huge resource for the UW System and the state. He also noted that by one estimate, Wisconsin has almost 300,000 small businesses, which includes many high-tech companies with product ideas, but lacking the capabilities or resources to undertake research. In addition, he

stated that the state has several health care organizations, and 10 to 14,000 highly-trained medical professionals who have ideas of how to create innovation within the health care field. Dr. John stated that WiSys' strategy was to build partnerships between small companies and health care organizations and the comprehensive campuses. Dr. John added that it was also important to form an alliance with state government for both funding and public relations purposes. He indicated that WiSys had specific programs to advance this strategy.

Dr. John shared examples of three WiSys programs. The first program, the Emerging Technology Centers, allows campuses to focus and prioritize resources in a specific area. He stated that UW-Platteville has a Nanotechnology Center because their faculty has the capability to conduct this type of research and produce products there. Another program, the Wisconsin Small Company Advance Program (WiSCAP), connects the small companies that require product development to campuses with the specific technical expertise to conduct the research. The third program, the Wisconsin Medical Entrepreneurship Foundation (WisMEF), connects health care organization to campuses.

Dr. John explained that in 2010, the Legislature provided approximately $2 million as a seed fund to conduct a pilot of WiSCAP. With this funding, WiSys initiated 21 projects involving 17 companies and nine campuses, resulting in 12,000 hours of student internships, 32 months of release time for faculty, and 16 high paying jobs. He added that this was just the beginning of WiSCAP, because many of the projects could take up to four years to accomplish. He said he hoped that many of these projects would result in marketable products that would go from campuses into the private sector.

Dr. John provided several examples of WiSCAP projects, including a partnership between UW-Whitewater and a Hartland company for the removal of mercury from fish tissue, resulting in a product that may be on the market by the end of 2012. He indicated that fishing is a $2.5 billion industry in Wisconsin, employing nearly 30,000 people. Many of the lakes in Wisconsin are contaminated with high mercury levels, but the technology develop by UW-Whitewater can remove up to 80 percent of the mercury from fish tissue, making it consumable by humans.

Dr. John provided another example of a project at UW-Oshkosh, where researchers are creating a supercapacitor that has shown a significant increase in energy density. Once the prototype is refined and marketed, it may be a significant revenue generator for the UW System.

Another WiSCAP project involves working with a Spooner company on the extraction of nutraceuticals and antiviral compounds from cranberries, an important crop in Wisconsin. The team has already identified three compounds that have shown significant efficacy in laboratory testing for antiviral activity, and are refining these compounds. He said that WiSys was beginning to establish contacts with industry groups that would allow for further testing of the compounds for either therapeutic applications or nutraceutical purposes.

Dr. John acknowledged that knowing the economic impact of these programs and projects is important, because the state would ask how the comprehensive institutions are contributing to economic development. Dr. John provided an example of a project to develop a redesigned

wheelchair in partnership with a Wisconsin company. According to a WiSys-commissioned study by NorthStar Consulting Group, the fully-implemented wheelchair project will create 245 jobs, resulting in approximately $73 million of economic impact, and generating $1.6 million in tax revenue for the state. Dr. John committed to following up on each of the 21 WiSCAP projects when fully implemented to determine the economic impact of the projects. He then invited UW-Stout researcher Kenneth Smith and one of his students to talk about the unique hydrogen fuel cell they developed.

Hydrogen Fuel Cell: Mr. Smith stated that it was a pleasure and an honor to present the newly developed hydrogen fuel cell, which was a product of the support provided by UW System and the WiSys Foundation. Mr. Smith said that the fuel cell was an example of the high-tech research that can come from UW campus facilities, specifically UW-Stout. He added that the fuel cell project has provided several students with high-tech internship research projects, including engineering student Destin Peters, who was setting up the hydrogen fuel cell prototype.

Mr. Smith explained that they took a very complicated idea and simplified it to make it more readily manufactured and very inexpensive. With the development of the hydrogen fuel cell prototype, Mr. Smith said they had succeeded in driving down the cost of fuel cells. He stated that the fuel cell had been under development for many years, but he was now connected with actual commercial end users because of the WiSys Foundation. He said that within two to three years, they would be ready to commercialize the fuel cell on a large scale, and at an affordable price. Mr. Smith asked Mr. Peters to tell the Regents about his experience as a student working on the fuel cell project.

Mr. Peters explained that he was an engineering technology student at UW-Stout, and started working with Mr. Smith as a student employee. He said that because of his engineering background, knowledge in material science, and ability to machine things for Mr. Smith, he was able to bring some things to the table. He added that the experience had been very beneficial for him, as he has been able to see the entrepreneurial side of the business and the product development, which would be beneficial for almost any student.

Regent Higgins asked Mr. Smith what type of facilitation was valuable during the process of moving from the idea to the product. Mr. Smith said that sheer tenacity was the quick answer, but added that he valued the support of WiSys and Dr. John, who believed in his idea and provided the necessary funding, and the UW-Stout campus which provided the facilities. Mr. Smith provided a detailed description of the steps involved in taking an idea, developing a design and a product, assembling the product, and finding resources to fund further development and marketing.

Regent Higgins complimented Mr. Smith for emphasizing the importance of the tenacity that was needed. He added that what he heard in Mr. Smith's answer was that there were also third-party actors involved in the process, and that it was helpful for him, as the developer, to be able to go to somebody, such as a WiSys partner, to identify third parties who might be receptive. He asked Mr. Smith if that was the type of facilitation that helped. Mr. Smith indicated that the facilitation provided was imperative, and that without it, the project would be

nowhere, as one person cannot do it alone. He added that it takes people like Dr. John, WiSys, and the UW-Stout organization, all coming together.

Regent Roberts asked Mr. Smith several questions related to the potential uses of the hydrogen fuel cell. Mr. Smith explained that they were hoping to build a five-to-seven kilowatt fuel cell to run small golf carts, battery charging systems, remote cabins, RVs, boats, and other devices that use electricity. He explained that their business model was similar to the one used by the propane industry, and because hydrogen is ubiquitous, the cost of refilling the hydrogen tank would be about $3. Mr. Smith said that one company was looking at integrating the fuel cell into golf carts during manufacturing, and that a one-kilowatt fuel cell would enable the golf cart to run for days before recharging it. In addition, the fuel cell could function as a portable generator, or a permanent generator if attached to a house.

President Spector thanked Mr. Smith for his presentation, and asked Dr. John if he had other presenters.

Health Care Projects: Dr. John introduced the next project, which was part of the WisMEF, program connecting health care institutions to campuses. He explained that the current network included Aurora Health Care, BayCare Clinic, Marshfield Clinic, WiSys, the eleven comprehensive campuses, a number of trade organizations, and several private companies. Dr. John explained that the network would help bring ideas from the health care organizations to the campuses, allow campuses to make prototypes, test the prototypes on campuses or in clinical organizations, and move them into private industry.

Dr. John stated that one of projects currently under consideration involved Aurora Health Care, WiSys, and UW-Stevens Point partnering with a small company from Milwaukee to develop a 3D imaging system. Students would be involved in making the 3D imaging system, and may also observe how it is used in an operating room setting. He emphasized that this is invaluable experience for students.

Dr. John then invited two UW-Eau Claire students, Enkhtuul Tsgotbataar and Katherine Anderson, to speak about their Warfarin drug-therapy project. He explained that Warfarin is drug that accounts for approximately two million prescriptions per year, but it also causes about 3,000 deaths per year because of bleeding issues. Dr. John stated that the student team, under the leadership of Professor David Lewis, who was seated in the audience, was trying to redesign the complex chemical molecule to make Warfarin safer. He noted that the Marshfield Clinic was partnering with Professor Lewis' team.

Ms. Tsogtbaatar greeted the Regents and thanked them for inviting her and her colleague. She explained that in 2009, they developed two new compounds of anticoagulant molecules which they named UWEC-K1 and UWEC-K2, and tested them at the Marshfield Clinic. The test results showed that after four days, the K1 compound had no effect on Warfarin but K2 compound was able to reverse the effect of the Warfarin. Ms. Anderson added that after 10 days, they found that K1 compound had a 50-percent enhancement of Warfarin anticoagulation, whereas K2 had a 300-percent enhancement of Warfarin anticoagulation. She explained that the

focus of their study is now to identify the mechanism by which the two Vitamin K analogs act in order to explain their observations.

Ms. Tsogtbaatar said that she started working on this research in the fall of 2009 with Dr. Lewis, and had great opportunities to present her research poster at both national and state meetings. She said that after the current semester, both would graduate from UW-Eau Claire and attend graduate schools. Although she had two choices, she decided to go to Ohio State University to get a Ph.D. in the biochemistry field. She said that the undergraduate research experience helped her to speak for herself, and realize the joy and frustration of her fellow science researchers. As an individual, the experience taught her to be persistent, and have high standards and work ethic. All of this would be beneficial to her when attending graduate school and in the future working as a researcher.

Ms. Anderson stated that she had been working in the research lab for two years, and had the privilege of attending the National ASC meeting and the Wisconsin Science and Technology Symposium. She said she was happy to say she would be graduating in four years with a degree in biochemistry, and planned to attend graduate school at Ohio State next year. She said she decided to attend UW-Eau Claire because of its reputation for quality undergraduate research, and her decision had paid off. Ms. Anderson said that thanks to the support from WiSys; the UW System; and their mentor, Dr. Lewis, the research had allowed her to collaborate with other students and faculty, taught her the successes and failures of lab research, and provided an opportunity to go to meetings and learn what chemistry is being performed around the country and the world. She said that overall, the experience had given her the opportunity and confidence to excel in graduate school.

President Reilly asked Dr. John and the researchers if the object of their research was to reverse the effects of Warfarin. Dr. Lewis explained that for 60 years physicians have been prescribing Warfarin, while at the same time cursing Warfarin because there are individual variations in dosing that makes stable dosing very difficult to predict. He said that the original intent of the research was to use the compounds that the students made to address the issues with individual variations in dosing by targeting a different enzyme in the blood clotting. Their research showed that the compounds were totally worthless for that, but that one of the compounds dramatically increased the anticoagulation potency of Warfarin after a ten day period. What the students are now trying to figure out how that happened. He explained that if the amount of the drug that is prescribed to a patient can be reduced, it could potentially increase the safety margin for the patient and ease prescribing for physicians. The general idea is to improve Warfarin and thereby improve its safety for humans.

Impact of WiSys: Dr. John returned to the podium and referred to slide illustrating the impact of WiSys, comparing the eight years prior to WiSys's providing full services in 2005 to what occurred between 2005 and 2011. Dr. John pointed out that WiSys had increased the amount of money at comprehensive campuses, with research and development funding increasing from approximately $900,000 to $3 million. In addition, the number of discoveries increased from two to 56, which reduced the cost per discovery from approximately $450,000 to $53,000.

Dr. John noted that since 2005, WiSys had facilitated nine start-up companies, which brought in $2.6 million in the first round of financing, created 32 high paying jobs, and resulted in licensing revenue for the UW System. Other impacts include $5.2 million in extramural funding and increased competitiveness of small companies that work with the universities to secure federal grants.

Dr. John suggested that the creation of nine start-up companies was impressive, referring to a slide illustrating the total number of start-up companies generated by some of the leading institutions, including the Mayo Clinic, Cleveland Clinic, John Hopkins, WARF, and the Medical College of Wisconsin.

Dr. John indicated that he and others believe that the industry and materials, health care, and renewable energy sectors would be significantly affected by the research activity occurring at the comprehensive campuses. He said that the UW System had a unique opportunity to show the state and the nation that engaging in undergraduate research can have a major economic impact in the country.

Support for Research and Development: Dr. John stated that he wanted to conclude by asking for the Board's support for some of the steps that WiSys wanted to take. Dr. John said he wanted to make research and development funding sustainable by taking some of the income generated by the technology-transfer activity and putting it back into a fund dedicated for research. He added that this would help in terms of not having to ask the state for research funding on a yearly basis.

Dr. John also suggested that there should be a uniform policy throughout the System to encourage and facilitate research and entrepreneurship by faculty and students at the comprehensive campuses. He indicated that faculty and student entrepreneurs could be supported by considering patents when making tenure decisions, providing release time for research and development, and providing credit for student internships. Dr. John also recommended that there needed to be approved guidelines defining WiSys's and campus roles in technology transfers. In addition, Dr. John stated that more resources for research and development on our campuses should be allocated.

Importance of Student Research: Dr. John then invited UW-Platteville Professor Jim Hamilton and engineering student Robinson Flaig to talk about faculty entrepreneurship and the importance of engaging students in research. Dr. Hamilton spoke about what had been accomplished at UW-Platteville using students like Mr. Flaig and the Nanotechnology Center for Collaborative Research and Development that the Regents approved and Dr. John created at UW-Platteville. He said that the Center was crucial to the development of projects and work with industry around the world. He said that they had been rather successful, with a number of start-up companies, features in Scientific American and Science magazines, winning the Governor's business plan competition in 2008, being identified as one of the top 30 "hot start-ups" in the United States, and being identified as a national finalist in the 2010 Clean Tech Open business competition.

Dr. Hamilton said there were four start-up companies originating from his labs at UW-Platteville, and students like Mr. Flaig were an integral part of the work. Dr. Hamilton provided additional detailed information regarding the success of the four start-up companies: Photonic Cleaning Technologies, Xolve, Pozilift Forensics, and MicroIonics. He emphasized that although the discoveries that led to Xolve occurred while doing basic research, he was told they had made the most fundamental discovery in the area of material science in years.

Dr. Hamilton said that the Center works on a combination of basic and applied research, involving students and other faculty, and WiSys has been a crucial and important part of this. He said he was asked to talk about the barriers to working with industry. Having worked a lot in Germany, he said the difference between what the Germans do and what is done in working with companies was amazing. In this country, industry does not like to work with universities because universities are too costly, and most importantly, too slow. He said that universities need to be agile, and need to respond to the needs of industry in months, not semesters. He said that the biggest burden in trying to move forward had been a lot of bureaucracy. He said that they were trying to work with industry and create a new model for building economic development in the state, and this work had resulted in about ten employees, with expectations to grow dramatically in the future.

Mr. Flaig introduced himself as a chemistry major at the UW-Platteville, in his second year, who had been doing research at the Center under Dr. Hamilton the entire time. He provided some examples of what he had worked on, and said that it was very interesting work. Mr. Flaig said that he was grateful for the practical experiences he had had within his field of study. By conducting research, he felt as if he was learning how to use instrumentation and how to be a team player in ways that he could not learn in the classroom. He said that the experiences also helped him identify goals and future expectations, such as attending graduate school. He said that the research experience had been an awesome opportunity

President Spector thanked the speakers and asked Dr. John to return to the podium for questions. Regent Bradley complimented Dr. John for the presentation. He said that Dr. John and his colleagues had demonstrated what a 21st-century higher education now includes. He said that within the UW System, people refer the institutions as either "research institutions" or "teaching institutions". He pointed out that Ms. Tsogtbaatar and Ms. Anderson attended a "teaching institution" to get an undergraduate education, but had been engaged in some cutting-edge research. Regent Bradley said that the Regents, the System, and the institutions need to work on using 21st-century terminology in referring to the UW institutions, and work out of the tendency to refer to "teaching institutions" as where students go to get an undergraduate education and where rarely and only as a special event do they have these phenomenal research opportunities. He also pointed out that when talking about "research institutions," the message is that nobody cares about undergraduate teaching. Regent Bradley mentioned the Madison Undergraduate Initiative as an example of excellent undergraduate teaching at a "research institution". Regent Bradley asked Dr. John if new terminology was needed, and if other states developed a terminology that could help UW System to more accurately describe what the institutions are doing.

Dr. John stated that Regent Bradley made a very eloquent case for why the current terminology should be discontinued. He said he believed that research was an absolutely critical tool, teaching student how to solve problems and how to look at problems in a different way.

Regent Bradley commented that he generally believed that good higher education policy comes to the Board in the form of recommendations that have been developed through a vetting process involving students, faculty, institutional leaders, and System leaders. However, there needs to be a top-down higher education policy with regard to the conversion to 21st-century attitudes about the roles of UW institutions with respect to research-based undergraduate education and opportunities. Regent Bradley stated his belief that the Board of Regents has to make it a top priority for all UW institutions to support both teaching and research efforts of their faculty members. He said this needs to be a message from the Board of Regents to the System President who sets goals and objectives for institutional leaders, who then lead and set directions for the campuses.

Dr. John said he believed that any guidance the Board could provide to the System and to the campuses in terms of how critical research is for faculty and students and the future of the state, would an important message to come from the committee.

Regent Walsh commented that the Board struggles over funding for higher education and its message. He said that this was clearly a nonpartisan message, and the Board needs to do a better job of sending the message. He said that this issue does not have politics attached to it; it is about the economy, the future, and the UW System being a solution and not the problem. He said that he was looking forward to the UW System's doing a better job of sending that message.

President Spector thanked everyone for a wonderful start for the REDI committee. The meeting was adjourned at 11:25 a.m.

Submitted by:

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