

Building the Research University of the Future

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UW System Board of Regents Meeting
June 5, 2008

We are delighted to host you once again in June. I see so many members of our faculty, staff and student and the wider community here to join for this very important Regents meeting.

Today I want to talk a bit about Building the Research University of the Future right here at UW-Milwaukee.

I want to go back to a year ago and revisit what I had presented to this board regarding our expansion plans. At the time, I indicated that UWM in its current physical size of 93 acres had too many people doing many good things on too little land. I laid out a prospective expansion plan that would take a significant number of years to complete but was hugely important. Our goal was to not only provide a high-quality education but also to begin decompressing our east side campus.

We indicated that our main campus would continue to house our undergraduate and general education programs, but that we would look to further expand our multi-campus university. Already we have the Great Lakes WATER Institute on the Port of Milwaukee and the School of Continuing Education, located in downtown Milwaukee. That school does really exceptional work and serves almost 20,000 students a year.

On this east-side campus, we do serve the bulk of our students, who total more than 29,000.

As I went over some of that discussion, I indicated that of all the peer urban research universities in the nation, there's only one that is more geographically and physically compressed as we are. We need to look to new space, and we need to conceptualize how that space will grow over time.

I had mentioned an academic health center in downtown Milwaukee in partnership with Aurora Sinai Medical Center and other potential partners in the central city including the city of Milwaukee and its Department of Health. I talked about a proposed School of Public Health and other UWM health-related colleges that would begin moving some of their operations. The UWM College of Health Sciences and College of Nursing and we've even been in conversation about the Helen Bader School of Social Welfare moving some of its operations. And in fact we are making progress. We are in discussions with

the city and the Milwaukee Public Schools. In fact, we have identified a site and a facility, and we are hoping that in the near future we will move that initiative forward.

I spoke about an Innovation Park located in Wauwatosa. And again, the issue was not about real estate but about partnerships: building partnerships with the Medical College of Wisconsin and the other fine institutions on that medical campus; bringing to that parcel, which is right now the hub of academic research in Southeastern Wisconsin, engineering; and doubling the size of our engineering programs at that location and growing them in partnership with those institutions. And we are making a lot of progress. We are in conversation with the county executive and the chairman of the Milwaukee Board of Supervisors. The conversations have gone well. We anticipate to be put on the agenda for the Milwaukee County Board in the near future.

If you read J. Martin Klotsche's book [*"The University of Wisconsin-Milwaukee: An Urban University"*], it goes into detail about the creation of this institution—it's a fascinating read. I had mentioned publicly that if I had read that book before accepting this position I might have had second thoughts. Because the truth is, it has been a struggle to build this research university, to grow and get the kind of resources that it truly needs.

But in Chancellor Klotsche's book he speaks about the original footprint of this campus, the one on which we now reside, and he spoke about promises that were made to extend that campus west to the Milwaukee River or east to Lake Michigan. And in fact, none of those promises were kept. The campus has been constrained on this footprint and we are now moving forward to expand.

Today I want to change the discussion a bit and talk about implementation. What are some of the specific things we are attempting to do and why is it important as we build Wisconsin's second research university.

When I was hired by this board four years ago, I was charged with building a premiere public urban university. That is something I had experience with. It was something I knew. I knew the ingredients required.

Four years later, as I look back, I realize it is more than just building a public research university in this part of Wisconsin. It is really fundamentally important to the future not only of this city, not only of this region, but also the state.

So, in fact, it has become almost a calling. It is almost a driven mission to ensure that this university takes its rightful place among public urban research universities.

Over the past four years, a number of troubling facts have come to light about the direction this region and the state—because this is its economic and population center.

If you look back over 30 years, you find that Milwaukee County's income per capita was higher than Dane County's. In fact, this was called the manufacturing capital of the nation and, one could argue, the world.

Ten years later, a number of things happened and in fact the numbers flipped a bit. Dane County's income per capita creeps past Milwaukee's.

If you fast forward 20 years, you find that the gap began to expand dramatically—to 25%.

And if you expand another 10 years, you find that the gap continues to grow and to widen.

And today, if you look at those figures, they're probably closer to 50%.

Clearly, something happened in Madison that didn't happen in Milwaukee.

And if you look at statewide comparisons, Minnesota and Wisconsin, our income per capita has been deviating. In fact, Minnesota's income is now \$4,000 per person higher than it is in Wisconsin.

Interestingly enough, I could have done a similar graph with the state of Illinois and it would have showed similar results.

But if in fact I look at that data and pull out Milwaukee, and I pull out Minneapolis and I pull out Chicago, the state income per capita is pretty much equal. So certainly something happened in Chicago that didn't happen in Milwaukee.

Chicago, in the 1980s, hit rock-bottom. That city pretty much collapsed. Its manufacturing sector was pretty much devastated in a very, very short period of time.

And something certainly happened in Minneapolis that didn't happen in Milwaukee.

If you look at some of these cities, and I would include Madison in that list, I would contend that those states decided to make major investments in their public research universities. Those cities began thriving. And in the case of Chicago, began reinventing itself.

One of the external consultants helping UWM with its master planning process, who didn't know a lot about Wisconsin, in short order made a couple of important comments:

- One was that it was his perception that the city of Madison was truly a creation of the university. The University of Wisconsin-Madison has really built that city in a remarkable way. There is no denying that UW-Madison has had a phenomenal impact on the growth, expansion, technological know-how and the ability to attract creative people to that part of the state.
- But he said that if you look at UWM, UWM is largely a product of the city. We are a creation of the city of Milwaukee and we are tied to the city of Milwaukee.

Forty years ago, when the sons and daughters of the manufacturing labor force of this city demanded a high-quality, low-cost education—when the workers demanded that for their children—UWM stood up, and we were the commuting campus for the sons and daughters of that labor force.

That labor force has changed quite dramatically. The fortunes of the city have changed quite dramatically. In fact, today, I would say the city is changing. I would say that under Mayor Tom Barrett the city is reinventing itself and UWM has to follow that. We have to follow that and drive it as well. So the university is, in this sense, is poised to support this city in multiple ways.

There's something else that's very important to realize. Not all the citizens of this part of the state have been hit equally by the economic decline in Southeastern Wisconsin. A large proportion of the citizens of the city of Milwaukee have been disproportionately hurt by the economic decline in Southeastern Wisconsin. This university has got to step up, and it has got to keep its doors open, and it has got to serve as a catalyst for economic development for this part of the state.

There are days when I wake up and say, "Gee, couldn't some other university do this. Isn't this just too hard a list for one university that has never been funded as a research university but has done some remarkable things."

My most frequent response is, "UWM is the only university that is large enough, that is comprehensive enough and has the ability to support this region." And all the initiatives that we are putting forward today, and there are many of them, further support this notion. Yes, those initiatives will enhance UWM, no doubt about it, all of those initiatives will enhance our university, but it is more than UWM. It is about this city. It is about this region. And it is about this state, as well.

Reinvention is what we need to do in Milwaukee. I think we are poised. There are a lot of exciting things going on in the city. I think we need to coalesce those initiatives and ensure that we move forward.

As you have seen in my PowerPoint, I have used a lot of quote from "Caught in the Middle," Richard Longworth's book that I sent copies of to the Board of Regents and other influential leaders in the state. It is an important book. It really does talk about how this state, as part of the Midwest, needs to expand.

I think we were all saddened this week to see what has happened in Janesville and the announcement of the upcoming closing of the General Motors plant. Well, I can tell you for the last 30 years, Milwaukee has seen occurrences like the closure of that Janesville factory year after year after year. And it is time that we begin to recreate ourselves and reinvent this city and mold this city so that we can create the future to which we all aspire.

Implementation is very important. Implementation and master planning are hugely crucial. We are in the midst of a very important master planning process. It is an open and consultative process.

But in fact, there are some who would prefer that we wait the two years for that master planning process to conclude before we proceed. That we wait two years before we put proposals before this Board of Regents in terms of establishing new schools and new academic programs, and searching for new space.

And while I may have some sympathy for that position, the truth is we can't wait until this master planning process is completed. We have got to take advantage of opportunities that arise. We will be informed by that master planning process. That master planning process will provide a lot of the details of the work that we need to move forward. But we cannot wait for two years and, in fact, the city cannot wait for two years. So we will keep that open, consultative process moving forward. We will work with the community. And we will also move forward specific initiatives.

As we build our research infrastructure, we are going to build it in a slightly different way. And I should point out that UWM has had phenomenal research since its inception. It has had wonderful research but the research has largely been focused in areas that are very important for a comprehensive university: the humanities, the fine arts, the social sciences and the professional schools. What has been lacking has been the creation of critical mass in particular areas such as the sciences and engineering.

Our College of Engineering and Applied Science has 60 faculty. We have just hired a new dean to serve that college from the University of Pittsburg. The conversation I had with him was consistent with the discussions I had with all the decanal candidates for that college. They each said, "Critical mass is achieved with at least 100 faculty in engineering."

We are much too small in the sciences and engineering. It is our intent to build in those areas because those are precisely the areas that will ensure that this part of the state and this economy move forward.

As we look to the future, we see that there are a lot of potential sources of support. We also know that there are multiple ways to get where we want to achieve. If you look at Southeastern Wisconsin—all of the academic institutions together generate about \$200 million of annual contract research. That includes the Medical College of Wisconsin (\$144 million), UWM (\$33 million) and Marquette (about \$8 million).

To tell you the truth, \$200 million worth of research in this region with this population is much too small.

For comparison, in the city of Chicago, if you add the University of Illinois at Chicago (\$318 million), Northwestern University (\$387 million) and the University of Chicago (\$294 million), they generate \$999 million worth of contract research.

Madison generates a huge amount: \$798 million worth of contract research.

The University of Minnesota – Twin Cities generates \$549 million in contract research.

[The source for all research totals, except Marquette, is “The Top American Research Universities, 2007 Annual Report,” which is based on 2005 data.]

Less than \$200 million in this region in this part of the state is much too small.

So what do we need to do?

Well, we know what our goal is for UWM. Our goal is to build our extramural research dollars from \$33 million currently to \$100 million. And those extramural research dollars will be expanded by those areas that we have identified in the sciences and engineering. This is absolutely essential.

If I look back four years ago when I was talking about this same goal of going to \$100 million, I was talking about quadrupling our research. Now, four years later, we’re talking about tripling the research. And I’m hopeful that in the next three or four years, we’ll be talking about doubling the research to get to our goal.

And there are multiple ways to do that:

- You will have proposals before you for new schools.
- We will launch new research institutes.
- With this board’s support we will hire new faculty in new areas.
- We will reallocate existing dollars as well to achieve our goal.

And in fact the way that we intend to build this research university of the future is a bit different than our sister institution in Madison.

We are very proud of the developments that have occurred in Madison. I don’t know if UW-Madison Chancellor John Wiley is here. John has been a huge supporter of UWM. John Wiley understands—more than many, many people—that for Madison’s research to have a true impact on Milwaukee, you must have an institution here that is sufficiently large and has critical mass to take advantage of that research, to build those particular bridges.

I want to quote from my January 2008 Plenary address on that particular strategy of growing that research in Madison:

“With a long history of state support commensurate with its mission as Wisconsin’s first public doctoral institution, Madison was able to build critical mass of faculty and research-support infrastructure, particularly in applied sciences, that led to licensed technologies and business development. It took a long time to do this, and (as you can see

from their \$2 billion operating budget – much of it from non-state sources) they have been very, very successful.

“But we are not UW-Madison, nor should we be. We are two very different types of research universities located in two very different communities. We do not live in Madison’s shadow. We live in the same sunlight; we’re just neighbors 80 miles further southeast.”

Our strategy is to build our research infrastructure a bit differently.

Fund-raising is important. Our Campaign for UWM was successful and from our perspective was hugely important in jump-starting a lot of our initiatives. We finished the campaign \$25 million beyond our goal and a year and a half early. We are always in fund-raising mode, as all of the chancellors can attest.

We are reallocating existing dollars to our Research Growth Initiative. We are now in the third cycle of that process. We are providing seed funding for our faculty to allow them to have the opportunity to get the additional extramural research funding that this campus so desperately needs.

And we are continuing to promote the UW System Growth Agenda. We have been very fortunate that the UW System has supported our component of the Growth Agenda. The Board of Regents has supported it. The State Legislature, on a bi-partisan basis, has supported it. And the governor has been a very big supporter of our first installment of \$10 million.

But I remind this group that when I spoke to you last year I talked about the three-legged stool. Part of that stool was a \$30 million investment in the base budget of UWM over six years. That \$30 million will be to hire people because that’s what we need more than anything else.

We are appreciative of this board’s support for our first installment. We are going to come back to you in the current DIN [decision item narrative] request with a second installment, and we’ll be back in the 2011 budget request cycle to ask for a third installment.

Adding doctoral programs is hugely important for us. When I arrived on this campus, it was interesting to note that with a third less faculty in the institution that I came from than UWM, it had twice as many doctoral programs.

We now have 25 programs. We have expanded. There will be a new doctoral program that will be presented to you as well, one we are very, very supportive of. And the question arises—because doctoral programs are very expensive, the most expensive in your portfolio—why are you doing that? Why are you building these programs across the board.

The truth is, they attract the best people. That's why we are building these programs. That's why we are building these schools. They attract the best talent. And that is what building a research university is all about. So we will continue to promote programs and as John Wiley has indicated, when the discussion was UWM should only have doctoral programs with an urban focus, John responded, "There is no such thing as urban physics."

We are going to build high-quality programs. Not large programs.

You will be presented with two major initiatives today: two new schools, the Joseph J. Zilber School of Public Health and the School of Freshwater Sciences. Both are hugely important for this region. They are an outgrowth of the needs of Milwaukee and Southeastern Wisconsin.

And if you look at the School of Freshwater Sciences, it is in many ways an easier lift. We already have the Great Lakes WATER Institute. That Great Lakes WATER Institute has been around for 40 years. They have been generating around \$4 million a year in external research, which is over twice their operating budget. They have been using for a research vessel a transport/tug boat made for the U.S. Army and used in the Korean War. And they have been housed in an old tile factory.

This is not the research laboratory of the 21st century. And if we establish this school, it will be, as far as we know, the first school of freshwater sciences in the nation. And it is appropriate that the school be here in Milwaukee on the Great Lakes, on the Port of Milwaukee, and that it have the best facilities and that it have the best laboratories. We no longer are going to accept second-rate facilities or second-rate laboratories. If we are bringing in the top talent across this country, we had better be prepared to provide them with the best tools to get them to do what they need to do.

And the School of Public Health is a similar initiative. It grew out of discussions with this board when I first arrived on campus and especially from eloquent discussions with Mayor Barrett. And I can honestly say publicly that when I first came to this campus, public health was not my highest priority. But it is now. Because I have realized that it is something that this part of the state and this city desperately need.

This does not take away anything from UW-Madison's exceptional work in public health. They have critical mass in public health. We do not. We have to build it from the ground up. But the truth is, location matters. And building an accredited school of public health in Milwaukee takes nothing away from what Madison has done, and Madison will be a partner with us in that process of building.

So why new schools and why new PhD programs? The bottom line: to attract the very best talent.

But we are also going to build this research with access because that is what we have done and been to this community. We have been an open institution that provides access

to students, many of whom are first generation. And we need to do that because the number of baccalaureate degree holders in this city is too small. It is 18%. And if Milwaukee is to compete with its peer cities, it needs to double. And it cannot double if we close our doors. So we are going to grow our research and grow it with access.

And the new model we have is going to be focused in a very few areas. These few areas are dictated by the needs of the city and our ability to create critical mass:

- Health care, and I include the School of Public Health as the major area;
- Advanced automation or advanced manufacturing, which includes devices and sensors, software and informatics, and materials;
- Biomedical engineering and the campus in Wauwatosa. If we can bring engineering to that Medical College campus, which has everything but engineering, we think we can add considerable value to that initiative. And if we can get closer to clinical research, which we do not have in significant measure on this east side, that will also bring considerable value to UWM;
- And fresh water, clearly an important area of growth.

Our research and focused investments have a geographic or spatial dimension. We are, in effect, going to be moving out, reaching out to the wider Milwaukee, Milwaukee County, and Southeastern Wisconsin region, taking our research outwards as opposed to bringing it in to the east side.

To do this, we know we can't do it alone. This institution alone cannot turn this economy around. This institution alone cannot do all the things that we need to do. So we need to do it with partners. Our partners will come from the non-profit sector, they will come from the public sector, and they will come from the private sector. We are already reaching out through our UWM Research Foundation to strike those agreements, build the collaborative efforts that we need to do, and move our initiatives forward.

Among those partners, I have two wonderful partners here with me today.

The first is Mayor Tom Barrett. Mayor Barrett has been a steadfast supporter of this institution. Both he and I share the belief that we ride together: if this institution progresses, the city progresses; if the city progresses, the institution progresses. In some respects, we're tied at the hip. We both have the future, the quality of life and enhancing that quality of life in mind.

Joseph Zilber is joining us as well. I have had the opportunity to get to know him over the past year. He has dedicated his life to this city. He has developed this city. And he is giving back to this city.

So it is with great pride that I introduce both Mayor Tom Barrett and Joseph Zilber.

[The comments of Mayor Barrett and Mr. Zilber can be heard on the audio file of the chancellor's remarks, starting at about 29 minutes into the presentation.]

With partners like these, we can only succeed.

In conclusion, I ask the UW System Board of Regents for the following:

- Approval of the Joseph J. Zilber School of Public Health.
- Approval of School of Freshwater Sciences.
- Authorization to implement Africology PhD program.
- Authorization to implement Spanish M.A. program.
- Authorization to implement Women's Studies M.A. program.
- Continuing support for UWM Master Plan efforts.
- Support for our state budget and financial support for the campus.

I have been blessed to serve my four years with a board that has truly supported UWM. You have really seen the importance of getting this institution to play its rightful role in the city. Thank you very much.

[This text is adapted from Chancellor Santiago's comments and is not verbatim.]