



Board of Regents

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DATE: June 4, 2019
TO: Members of the Board of Regents
FROM: Jess Lathrop, Executive Director and Corporate Secretary

PUBLIC MEETING NOTICE
Meeting of the UW System Board of Regents
to be held at UW-Milwaukee Union, 2200 East Kenwood Blvd., Milwaukee, Wisconsin
on June 6-7, 2019

Wednesday, June 5, 2019

5:30 p.m. – 7:30 p.m. Welcome Reception hosted by Chancellor Mone
3435 North Lake Drive, Milwaukee
Event is by invitation only. Please contact Lynn Wilk at
lcwilk@uwm.edu for more information.
A quorum of the Board of Regents may be present; no Board business will be conducted.

Thursday, June 6, 2019

7:45 a.m. – 8:55 a.m. Joint meeting of the Audit Committee and the Business & Finance
Committee – 1st Floor, Fireside Lounge
9:00 a.m. – 10:30 a.m. Business and Finance Committee – 1st Floor, Ballroom West
9:00 a.m. – 10:30 a.m. Education Committee – 2nd Floor, Wisconsin Room
10:45 a.m. – 12:00 p.m. Audit Committee – 1st Floor, Fireside Lounge
10:45 a.m. – 12:00 p.m. Capital Planning and Budget Committee – 1st Floor, Ballroom West
10:45 a.m. – 12:00 p.m. Research, Economic Development and Innovation Committee –
2nd Floor, Wisconsin Room
12:00 p.m. Lunch – 1st Floor, Ballroom East
A quorum of the Board of Regents may be present; no Board business will be conducted.

1:00 p.m. All Regents – 2nd Floor, Wisconsin Room

1. Calling of the roll
2. Introduction of recently appointed Regents
3. Other updates and introductions

4. Opening remarks by UW System President Ray Cross: The UW System is an invaluable asset to help solve Wisconsin's most pressing needs
5. Host-campus presentation by UW-Milwaukee Chancellor Mark Mone: "Meeting Wisconsin's Needs through Collaboration"
6. Panel presentation: UW System's Freshwater Collaborative of Wisconsin
7. Closed Session—1st Floor, Fireside Lounge
Move into closed session to: (a) consider a student request for review of UW-Madison disciplinary decision, as permitted by s. 19.85(1)(a), (f), and (g), Wis. Stats.; (b) consider personnel evaluations of chancellors, as permitted by s. 19.85(1)(c), Wis. Stats.; and (c) confer with legal counsel regarding pending litigation (A.R. v. Board of Regents; Fabbrocini v. Pearce, et. al.) and potential litigation as permitted by s. 19.85(1)(g), Wis. Stats.

5:30 p.m. Reception—Lubar Entrepreneurship Center and UWM Welcome Center
2100 East Kenwood Boulevard, Milwaukee, Wisconsin
A quorum of the Board of Regents may be present; no Board business will be conducted.

The closed session agenda also may be considered on Friday, June 7, 2019, as the Board's needs may dictate. In addition, the Board may reconvene in open session regarding matters taken up in the closed session, including voting, where applicable.

Information about agenda items can be found during the week of the meeting at <https://www.wisconsin.edu/regents/meetings/> or may be obtained from Jess Lathrop, Executive Director, Office of the Board of Regents, 1860 Van Hise Hall, Madison, WI 53706, (608)262-2324. Persons with disabilities requesting an accommodation to attend are asked to contact Jess Lathrop in advance of the meeting. The meeting will be webcast at <http://www.wisconsin.edu/regents/board-of-regents-video-streaming/> on Thursday, June 6, 2019, from 1:00 p.m. to approximately 3:15 p.m. and on Friday, June 7, 2019, from 9:00 a.m. to approximately 11:45 a.m.

PROPOSAL TO LAUNCH THE FRESHWATER COLLABORATIVE OF WISCONSIN

BACKGROUND

Wisconsin is bordered by the greatest river system in North America—the Mississippi—and the greatest freshwater system on the planet—the Great Lakes—and boasts over 15,000 inland lakes, 44,000 miles of rivers, and unique groundwater assets. The state’s economy is driven by water, and its major industries rely on our natural water abundance and quality to thrive, from Agriculture (583 million gallons withdrawn per day) and Public Use (555 million gallons) to Energy Production (4.2 billion) and Manufacturing/Food and Beverage (382 million). The state’s daily water withdrawals are enough to drain a body of water equal to Lake Mendota in three weeks.

Water also drives Recreation and Tourism, Real Estate, Commercial Fisheries, Shipping and Transportation—all significant contributors to jobs and GDP.

Water supply risk is ranked above all others among manufacturers, according to the World Economic Forum, and on average most manufacturing facilities would shut down in under four hours if their access to water were interrupted.

Water is Wisconsin’s global competitive advantage, having already grown a world-class water technology industry from within, at a time when water is the world’s fastest growing economic sector and meeting the challenges of water access and security is predicted to be a \$23 trillion challenge in the next 20 years.

REQUESTED ACTION

Information only.

DISCUSSION

The campuses of the University of Wisconsin System (UWS) propose to launch the Freshwater Collaborative of Wisconsin (FCW) to:

- Establish the nation’s most significant, integrated, multi-institutional higher education program serving the freshwater economy, allowing students to traverse disciplines and focus areas across all 13 UW System campuses;
- Attract local, regional and global talent to Wisconsin, securing Wisconsin’s role as the “Silicon Valley of Water”;
- Fill the global, regional, and local demand for a water workforce through explicit structuring of curriculum, training, and workplace experience;

- Solve local, regional, and global water resource problems through collaborative research across the natural science, agriculture, engineering, social science, economics and policy arenas; and
- Solidify Wisconsin's world leadership in freshwater science, technology, entrepreneurship, and economic growth.

Built upon the broad expertise, world-class facilities, research acumen, and commitment to undergraduate and graduate student training across all 13 campuses, the FCW is designed to unleash the collective assets of the UWS and place them into an elite, one-of-a-kind program of training and research, while launching a talent development program in which students fully engage a diverse, multidisciplinary course of study across UW campuses.

The FCW will solidify Wisconsin's competitive advantages represented by our expanding water economy, our unparalleled water wealth and geography, and the diversity of intellectual strengths within our system of public universities. FCW will lay the foundation for a new era of inter-campus, state agency, and private sector cooperation and partnership, trigger Wisconsin's lead in water sector innovation, and advance a unique platform for linking economic and workforce development with higher education.

Wisconsin industries are facing significant workforce shortages, and nowhere is this truer than in the water sector. Water is the fastest growing sector of the world's economy (about \$800 billion annually by 2035), and is fueling a growing demand for hydrologists, ecologists, engineers, modelers, data scientists, aquatic toxicologists, policy analysts, business leaders and others who can understand and anticipate water issues and problems, and who can devise, implement and manage solutions.

In June of 2018, the Brookings Institute identified "1.7 million workers were directly involved in designing, constructing, operating, and governing U.S. water infrastructure" alone, and "they consistently represent 1 to 2 percent of total employment in the country's metro and rural areas." This matches up with a UW-Milwaukee analysis of workforce data, which suggests a Wisconsin water workforce of more than 60,000, or about 2% of the state's total employment. According to the same Brookings report, water occupations pay well, and consistently exceed the average national average for all occupations.

Lack of talent threatens the success of our water and water-dependent industries, hampers their growth and drives these industries to look for skills, ideas, and investment outside our state. Eighteen of the 29 most common occupations that require a BA/BS or higher had fewer Wisconsin graduates in 2016 than the estimated number of water sector job openings available. State graduates could only meet 11% of the industrial engineering jobs and about 50% of the mechanical engineering jobs available.

The basis for a solution already exists within the impressive array of water related specializations and expertise across all UW campuses. With further investment, programs can be created, strengthened and coordinated to support industry and societal needs across the entire footprint of water. Investing in the Wisconsin water brand will be a magnet for talent from across the country and will lure students and professionals to unique opportunities in higher education and careers in Wisconsin.

FCW will be designed to address 10 Grand Water Challenges facing Wisconsin and the world, and will be developed and phased in over three biennial budgets:

2019-21 Biennial Budget

- Agricultural Water Management
- Industrial Water Engineering and Technology
- Water Quality Safety and Emerging Contaminants
- Great Lakes Management and Restoration

2021-23 Biennial Budget

- Water Infrastructure: Collection, Distribution, Treatment
- Water Business and Finance
- Watershed Management and Restoration

2023-25 Biennial Budget

- Water Security, Protection and Resilience
- Healthy Recreational and Transportation Water Use
- Aquaculture/Aquaponics/Water Food Systems

Each Grand Challenge will be addressed by a collaborative of UW System Campuses. The universities will address these Challenges through five cross-cutting themes: 1) Fundamental Research on Water Systems; 2) Driving Technology Innovation; 3) Workforce Development; 4) Resource for Science Driven Water Policy and Law; and 5) Informing Sustainable Management of Water Resources.

Requested State Action

In order to launch all 10 Grand Water Challenge collaboratives, the FCW will require a total of \$27.6 million in ongoing base (GPR) support phased in over three biennia. This proposal requests the state:

- Include \$10.7 million in base budget (GPR) to start Phase 1 of the Freshwater Collaborative in the second year of the 2019-21 State Budget;
- Build upon the \$10.7 million base annual appropriation in each of the next two biennial budgets:
 - a. In the second biennium (Phase 2) add an additional \$9.9 million to bring the total in the second biennium to \$20.6 million of ongoing base (GPR) support;
 - b. In the third biennium (Phase 3), add an additional \$7.0 million to a total of \$27.6 million in ongoing base (GPR) support.
- Provide authority to allocate the funds to the 13 UW System institutions to be spent to:
 - a. Devise new water-centric training programs focused on undergraduates;
 - b. Provide scholarships and student support to retain and attract new talent;
 - c. Amplify marketing/recruiting, branding Wisconsin as the “Silicon Valley of Water”;
 - d. Enhance Workforce Development Programming – internships, research experiences, training institutes, certificate programs, and graduate research; and
 - e. Recruit new faculty and staff to drive training programs, research and innovation.

Summary

The FCW will create a dynamic university experience built upon the individual advantages and regional market strengths of campuses across the state, coordinated for maximum impact and student success, and marketed globally. It represents a Wisconsin-crafted solution that will solve water industry challenges, leverage our geographic and academic assets, and make water a hallmark for us on the world stage. The return on this investment will be as follows:

- FCW will keep Wisconsinites here and attract out-of-state students, bringing new money and new talent into a state that has virtually no workforce growth projected. Students will receive a unique and valuable education that translates into additional talent and workforce for our employers. This will allow existing industries to fill vacancies and innovate. It will also attract more water-dependent companies to WI.
- Wisconsin's ability to innovate and solve water problems will increase dramatically. FCW will be a research powerhouse, attracting significant research dollars to the state. Faculty and students will work with industry and community leaders to improve our health and increase economic vitality. Graduate students will take their expertise and become the innovators the state needs for future growth.
- Wisconsin will strengthen its brand as the global water leader. It will build on the work the Water Council has done to place Wisconsin on the global stage.

Goals and Metrics for full implementation in 2025, including anticipated outcomes at the university level, include:

- 1,000 new undergraduate water students
- 400 new graduate research students
- 100 new faculty, researchers and water professionals
- 4-6 regional advisory councils
- \$10-15 million in new research funding attracted from federal and private agencies
- 23 freshwater professorships across the 11 comprehensive universities
- 23 intensive, hands-on training programs available
- 650 jobs created by the FCW activities
- 100 internships with industry
- Online programming and shared courses
- One system-wide research collaborative
- 12 inter-system campus-to-campus visiting professorships

The implementation plan provides the roadmap for FCW to navigate solutions to Wisconsin's water challenges. With investment and support, we can chart the course to a prosperous water economy.

RELATED REGENT POLICIES:

N/A