FACTS AND INFORMATION

2022

STUDENTS
Total enrollment: 24,029 students
- Milwaukee campus: 22,592 students
  - 18,171 undergraduates
  - 4,421 graduate students
- UWM at Washington County: 387 students
- UWM at Waukesha: 1,050 students
- Students from 72 Wisconsin counties and 49 states
- 38% of undergraduates are first-generation college students
- 982 veterans and military-related students enrolled, more than any other Wisconsin university

ALUMNI
Over 200,000 alumni
- 74% live and work in Wisconsin

ACADEMICS
206 academic programs
- 2 associate programs
- 100 bachelor’s programs
- 66 master’s programs
- 38 doctoral programs

Largest and top-rated online education program in Wisconsin
- More than 900 online courses
- 49 fully online degree and certificate programs

COMMUNITY ENGAGEMENT
- Partnerships with more than 3,000 businesses, nonprofits and other organizations
- 33,000 hours of service-learning completed by students in 2021

ECONOMIC IMPACT
- $1.5 billion economic impact on Wisconsin, according to NorthStar Consulting Group

RESEARCH
- Ranked in the top 4 percent of research universities, a category known as R1, by the Carnegie Classification of Institutions of Higher Education
- More than $40 million in grants in 2020-21
- Recognized by national Council on Undergraduate Research - UWM has more than 1,000 undergraduate researchers

ONLY AT UWM
- Wisconsin’s only schools of architecture, freshwater sciences and public health
- The state’s largest nursing program
- An engineering college ranked in the top 10 percent in the U.S.
- A nationally recognized actuarial science program
- The state’s only bachelor’s program in ASL/English interpretation
- A film program ranked among the top 50 in the world (Variety Magazine)
- The best online education program in the state, according to U.S. News & World Report
- The only NCAA Division I baseball team in Wisconsin
FACTS AND INFORMATION

2022

STRATEGIC PARTNERSHIPS

• The **UWM Lubar Entrepreneurship Center** is a powerful resource for entrepreneurs, innovators and anyone who wants to make a positive change in their community. From courses and programs to workshops and networking, LEC provides the tools needed to transform ideas into reality.

• The **Connected Systems Institute (CSI)** develops manufacturing domain specialists through education, state-of-the-art lab facilities and collaborative research opportunities. CSI facilitates research collaboration between industry and academia to support the development of advanced manufacturing processes, including working with tools that support domain-specific research and education on the industrial internet of things (IIoT), factory automation and the implementation of Industry 4.0 solutions.

• The **Center for Water Policy** builds on the research of **UWM’s School of Freshwater Sciences**, the **UW System’s Freshwater Collaborative of Wisconsin**, and networks and partnerships with top scholars, scientists and policy institutions around the world.

• The **Northwestern Mutual Data Science Institute** is an industry and academic partnership between Northwestern Mutual, UWM and Marquette formed to inspire and cultivate passion for data science in the Milwaukee region. The groundbreaking partnership is helping to build a technology ecosystem and advance southeastern Wisconsin as a national hub for technology, research, business and talent development, while also creating an organic pipeline of tech talent.

• **UWM’s TechEd Frontiers** offers innovative online learning pathways for people to learn new workplace skills and advance in their careers. The on-demand learning allows employees and employers to grow together, focusing on the most in-demand skills and individual coaching to help employees immediately apply their new knowledge in the workplace.

• **UWM’s Small Business Development Center in its School of Continuing Education** is a go-to resource for entrepreneurs and business owners. The center builds strong frameworks for growing and improving small- and mid-sized companies while also helping launch successful new ventures. The center provides free online training as well as no-cost, confidential consulting and education programs.

ELIMINATING EQUITY GAPS

• UWM is one of three major public-education institutions in Milwaukee to co-found **M-cubed**, a critical initiative to close the achievement gap. UWM is home to the **Moon Shot for Equity’s** inaugural launch in the Milwaukee region.

OPPORTUNITIES FOR ALL

• UWM has partnered with six other organizations for the **Milwaukee Anchor Collaborative**, which is dedicated to hiring more people of color and purchasing more goods from disadvantaged areas. Undertaken with the Metropolitan Milwaukee Association of Commerce, **UWM’s Student Success and Talent Pipeline Initiative** places students from diverse backgrounds into internships to prepare them for career success.
CREATING A TALENT PIPELINE FOR WISCONSIN’S MANUFACTURERS
CONNECTED SYSTEMS INSTITUTE

DIGITAL ADOPTION OUTREACH TO SMALL AND MEDIUM-SIZED MANUFACTURERS

The University of Wisconsin-Milwaukee’s Connected Systems Institute is working to create a new team to support Small and Medium Manufacturers in Southeast Wisconsin on their digital adoption journey. $300,000 in funding for this initiative would fund a full-time employee, two graduate assistants, working space, equipment and recruitment marketing.

About 140,000 small and medium manufacturing jobs are located in the M7 region, and at least 20% of those jobs are at risk over the next 30 years. About 85% of Wisconsin’s 9,400 manufacturers are small or medium, and most have made little to no progress in adopting digital technologies necessary to survive in today’s supply chain.

To ensure that the Milwaukee region remains globally competitive and the economic impact of our manufacturing sector remains sustainable, two urgent and interrelated problems must be addressed:

1) Our small and midsize manufacturers are facing an adopt-or-die moment. They must make a technological transition to remain viable.

2) Meanwhile, we must address the economic distress tied to the decline of traditional manufacturing that has had a staggeringly disproportionate effect on our diverse populations.

This project is to start a team of business-facing coaches in digital manufacturing adoption who can serve as a support system for manufacturing companies as their move along their digital adoption journey. Specialists would work with individual companies to assess their digital readiness, and coach them through creating an implementation plan that will have the highest return on investment.

The Outreach Center would be hosted by and housed at the CSI. Staffing the center with a program specialist along with student workers would cost approximately $300,000 per year. This includes staff, equipment, and recruitment materials. Minor space reconfiguration will be required to create a “service center” for SMMS to visit the team.

Referrals will be made where appropriate to the MEPs, to partner companies who provide digital adoption consulting and integration services and to educational programming offered through the CSI’s growing Manufacturing Workforce Innovation Program.

Follow on funding will be necessary to continue the program beyond the one-year proposed for the CFP. Please note that aligned proposals have been submitted to NIST for MfgTech roadmapping and to WEDC for a workforce learning program expansion. This proposed project is the third leg of the stool for CSI to support SMMs which includes: 1) digital manufacturing education, 2) cutting edge research and 3) digital adoption outreach services.
CSI’s Manufacturing Workforce Innovation Program (MWIP) will help address the talent gap and worker shortage that preceded the pandemic and has only been made worse by it.

Of the 400 employers surveyed in 2021 by the Wisconsin Center for Manufacturing and Productivity, 83 percent stated they were having difficulty finding the right talent. The impact has been widespread across manufacturers of all sizes in all areas of Wisconsin.

The MWIP will provide in-demand comprehensive set of technology and digital skills needed in the manufacturing environment. Participants will be nominated by employers from within their workforce, from nearly qualified applicants, or recruited from job centers.

While concentrated in the M7 region, where there are 180,000 manufacturing jobs, the courses will be made available to individuals across the state. Special emphasis will be placed on recruiting underrepresented learners.

MWIP currently offers two in-demand courses:

• **Digital Manufacturing Leadership**
  This course is geared toward business leaders of small and medium manufacturing facilities who are ready to steer their team toward adopting Industry 4.0 advanced technologies. This nine-week course is designed to help participants better understand, measure, and mitigate risk in manufacturing. Each learner emerges with an individualized written asset management strategy, a financial plan for measuring improvement, and a digital governance strategy for mitigating specific risks.

• **Microsoft Azure for Manufacturing**
  This course introduces manufacturing professionals to the possibilities of IIoT solutions using Azure. In collaboration with Microsoft, CSI has created Microsoft Azure in Manufacturing, a six-week hybrid course that includes online and in-person instructor-guided labs at CSI’s fully functioning state-of-the-art manufacturing facility, leveraging the testbed data and contextualizing lessons for manufacturing domains.
UWM’s College of Engineering & Applied Science is known for high-impact, applied research and collaborative partnerships. Our rich and productive partnerships with industry and government ensure a meaningful path for discoveries through innovation and tech transfer.

**ENERGY AND SUSTAINABILITY**

Southeast Wisconsin is home to over 1,000 energy, power and controls companies. The College of Engineering & Applied Science is in the ideal location for researchers to drive innovation, cost savings and fuel talent pipelines for the next generation of energy engineers. Their focus includes microgrids that complement the nation’s energy grid, cheaper and cleaner lithium-ion batteries, including faster charging batteries and safer and improved energy storage.

UWM hosts Wisconsin’s only U.S. Department of Energy Industrial Assessment Center, helping manufacturers and utilities increase productivity and competitiveness by reducing energy and water consumption, enhancing cybersecurity and adopting smart manufacturing technology.

GRAPES: The Midwest’s university partner in the Grid-connected Advanced Power Electronic Systems, a National Science Foundation Industry/University Cooperative Research Center (U/UCRC) with a mission to accelerate the adoption and insertion of power electronics into the grid to improve system stability, robustness and economy.

**WATER AND THE ENVIRONMENT**

Researchers are focused on designing more cost-effective filters, sensors and membranes, making our water supply cleaner and safer. The new Freshwater Collaborative of Wisconsin is led by an alumna from the college.

UWM faculty leads Water Equipment and Policy Center (WEP), a National Science Foundation Industry/University Cooperative Research Center (U/UCRC). WEP provides innovative water technologies and processes to promote advancement of the water industry, conducting research to inform water policy makers. Nearly 100 pre-competitive research projects have been completed in the past decade.

**INFRASTRUCTURE AND TRANSPORTATION**

The college hosts the largest structural testing facility in Wisconsin, providing a ready workspace for industry and government collaboration. Our researchers are known worldwide for their expertise in concrete, structural engineering, traffic safety, urban mobility, and transportation solutions.

Researchers from the college lead the Institute of Physical Infrastructure and Transportation, fostering collaboration with transportation and infrastructure companies and agencies across Southeast Wisconsin and beyond.
BIOMEDICAL AND HEALTH

World-renowned faculty and their students are making an impact on our world on many fronts: more accurate scanners so medical providers have sharper images to make better diagnoses; prosthetics, robotics and medical devices to promote better outcomes; and biomaterial-based therapies to improve bone healing are just a few examples.

ADVANCED MANUFACTURING

UWM researchers have long-standing collaborations with the region’s strong manufacturing community.

The Connected Systems Institute, established in partnership with Rockwell Automation, hosts an Advanced Manufacturing Testbed, the only one of its kind in the U.S. CSU provides students and researchers an integrated manufacturing platform, supporting development of advanced manufacturing processes.

Additional support is provided from We Energies, the Wisconsin Economic development Corporation, Microsoft, Cisco and Dell.

GREAT STUDENT OUTCOMES

The average starting salary Bachelor’s Degree student is $71,800 and 95% of students start careers or continue their education upon graduation. 74% of graduates stay in Wisconsin to contribute to the local economy

CEAS graduates have been hired by:

Amazon • Apple • Briggs & Stratton • Eaton • FCA Fiat Chrysler Automobiles • FIS • GE Healthcare • Generac GRAEF • Harley-Davidson • Intel • Johnson Controls Kohler Company • Microsoft • Milwaukee Tool • Modine Manufacturing • Molson Coors • Northwestern Mutual Raytheon Missile Systems • Rockwell Automation • Tesla We Energies

A DIVERSE STUDENT POPULATION

• Over 2,000 students enrolled in CEAS and 41% of students in the college are non-white.
• First-generation students comprise 28% of the students in the college — up 28% over the last 10 years.
• College saw a 44% increase in veteran students in the college over the last 10 years, and female students have nearly doubled at the college over the last 10 years.

ALUMNI CEOs AND ENTREPRENEURS

Satya Nadella, CEO of Microsoft, just the third CEO in the company’s history

John Kissinger, CEO of GRAEF, an international engineering, planning and design firm. His work for the Milwaukee Art Museum Calatrava addition was named the “Number One Design of 2001” by Time Magazine.

Carrie Bristoll-Groll, Founder and CEO of Stormwater Solutions Engineering, LLC (SSE), the only stormwater-focused engineering firm in Wisconsin.

Jesse DePinto, Co-founder and CEO of Frontdesk, short-term apartment rental company named to Inc.’s 5000 fastest-growing travel companies in 2021 and 2022.

Ben Caya, Founder and President, Spike Brewing Equipment, overseeing a $9M expansion into a new Milwaukee location.
LOCATING A SATELLITE FIELD STATION ON LAKE MICHIGAN’S WESTERN COAST

SCHOOL OF FRESHWATER SCIENCES

The University of Wisconsin-Milwaukee School of Freshwater Sciences invites NOAA Great Lakes Environmental Research Laboratory to consider using the UWM Great Lakes Research Facility in Milwaukee as its primary base of operations for research conducted on the western side of Lake Michigan.

• State-of-the-Art Labs & Facilities: Access to labs, marine operations, instrument shop, meeting space and equipment located in the Great Lakes Research Facility - no need for NOAA to construct anything new.

• Collaboration: Ability to collaborate with faculty, technicians, students and the community who have expertise in freshwater sciences and atmospheric science. Our facility houses nine on-site governmental and non-profit collaborators.

• Prime Location: Proximity to the new Lake Michigan NOAA Marine Sanctuary, the entirety of the Wisconsin and Illinois coastline, infrastructure in Milwaukee and Chicago, and access to NOAA’s Muskegon location.

COLLABORATE WITH A LEADING RESEARCH AND ACADEMIC INSTITUTION

UWM is ranked nationally among the top four percent of research universities, a category known as R1, by the Carnegie Classification of Institutions of Higher Education. We’re also a Carnegie Engaged Institution. UWM is the most diverse campus within the UW System, thus offering NOAA opportunities for recruiting new talent.

• 24,000+ students on three campuses; 83% are Wisconsin residents
• 5,000+ graduates per year, over 80% of alumni stay in Wisconsin
• 1,023 international students from 87 countries
• Nearly 1,000 veteran and military-related students enrolled
• 38% of undergraduates are first-generation college students
• 33% are students of color

The Great Lakes Research Facility houses UWM’s School of Freshwater Sciences, which has a longstanding history in freshwater research and offers undergraduate and graduate degree programs in freshwater sciences and atmospheric science. The School of Freshwater Sciences is also home to the UW Center for Water Policy and is the lead institution within the Freshwater Collaborative of Wisconsin, a partnership of Wisconsin’s 13 public universities focused on student training, workforce development and freshwater research.

The Great Lakes Research Facility houses 9 additional on-site collaborators

• U.S. EPA RV Lake Guardian
• USDA – Agriculture Research Service, Aquaculture and Fish disease
• USGS – Upper Midwest Water Science Center, Water Quality Monitoring
• Wisconsin Sea Grant Program
• Wisconsin Department of Natural Resources – Lake Michigan Fisheries Management Unit
• Freshwater Collaborative of Wisconsin
• Harbor District Inc.
• Southeast Wisconsin Watershed Trust
• Milwaukee Riverkeeper
FACILITIES AVAILABLE TO NOAA
The UWM Great Lakes Research Facility is an oceanographic-style facility designed to facilitate Great Lakes and water science research and education. Key features and benefits include:

- ~ 200,000 ft² of laboratory, marine operations, classroom, and conferencing space
- 1,400’ of protected dock space
- Location in Milwaukee’s protected Harbor District with direct access to Lake Michigan
- Easy access to major airports in Milwaukee and Chicago; connected to GLERL’s Lake Michigan Field Station in Muskegon by high-speed ferry

RESEARCH FACILITIES AND ONSITE SUPPORT CENTERS AND LABS
The UWM Great Lakes Research Facility has extensive research centers, labs and other facilities to support NOAA researchers and visiting scientists.

Research Centers
- Great Lakes Genomics Center
- Great Lakes Aquaculture Center
- Water Technology Accelerator
- Center for Water Policy
- Innovative Weather
- National Science Foundation Water Equipment and Technology Industry/University Cooperative Research Center

Onsite Support Facilities and Labs
- Analytical Core Facility
- Aquaria and Fish Research Labs
- Bio Secure and Quarantine Labs
- Data Visualization Labs
- DNA Sequencing and Bioinformatics
- Instrument Shop
- Robotics and Great Lakes Observation Systems Lab
- Marine Operations Facilities
- U.S. EPA Great Lakes Fish Tissue Archive

RESEARCH FLEET
UWM operates a fleet of craft that includes the R/V Neeskay, small boats, and remotely operated vehicles. It also operates several NOAA GLOS Buoys. All UWM craft are available for use by NOAA scientists and partners through UWM’s participation in NOAA CIGLR. In addition, the U.S. EPA R/V Lake Guardian docks and winters at the Great Lakes Research Facility.

The School of Freshwater Sciences has plans to construct the R/V Maggi Sue, which will be the Great Lakes’ most technologically advanced research vessel.

CONCLUSION
UWM’s Great Lakes Research Facility is a hub for freshwater research. By locating the GLERL’s western Lake Michigan research operations at the Great Lakes Research Facility, NOAA could cost-effectively connect with numerous water organizations, tap into UWM’s network of faculty expertise, access workforce talent, and gain immediate use of state-of-the-art facilities.

For questions, discussions, or to set up a visit, please contact Rebecca Klaper at rklaper@uwm.edu or Eric Leaf at leafe@uwm.edu.