University of Wisconsin Green Bay

COLLEGE OF SCIENCE, ENGINEERING & TECHNOLOGY

Winter 2023

NEWSLETTER

IN THIS ISSUE...

A MESSAGE FROM THE DEAN,

JOHN KATERS

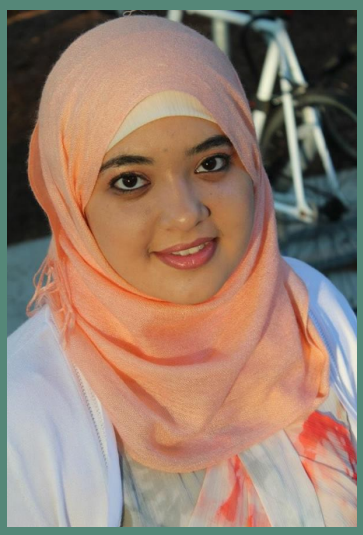
One thing should be very clear in this issue of the College of Science, Engineering, and Technology newsletter - Eco-U is alive and well! There are multiple stories regarding the great work of our students and faculty on a range of environmental issue, with water clearly taking center stage. This includes creative work found in a book about the “living laboratory” that is Toft Point in Door County to the utilization of wireless technology for monitoring water quality in Green Bay that was recognized with a national Climate Changemaker Award by the CTIA Wireless Foundation. The impacts of this work can be seen locally, from funded projects on the Menominee River to student presentations at the Manitowoc campus, as well as nationally, through conference presentation and peer-reviewed research publications authored by faculty and students. October 18, 2022, marked the 50th anniversary of the Clean Water Act, an event that was celebrated at UW-Green Bay to recognize the significant improvements in water quality that have taken place since the 1970s, but there is still much work to do and UW-Green Bay is ready for the challenge.

Welcome New Faculty and Staff!

Amanda Banet

Director of the Cofrin Center for Biodiversity

Ph.D, University of California, Riverside



Assma Boughoula

Assistant Professor Computer Science

Ph.D, University of Illinois at Urbana Champaign

Paolo Segre

Assistant Professor Biology

Ph.D, University of British Columbia

Rachel Thomas

Assistant Professor Nutritional Science

Ph.D, University Kebangsaan Malaysia

Several CSET Webpages Get New Look

Human Biology

The UW-Green Bay web redesign team is excited to announce that the new UW-Green Bay Human Biology webpages are live!

UW-Green Bay is one of the only colleges in the Midwest with a human biology program, and the Greater Green Bay Area is one of the state's strongest medical hubs! The Phoenix human biology faculty is committed to inspiring and preparing the next generation of scientists and healthcare professionals with six areas of emphasis within the curriculum. With focus on the human body, UW-Green Bay's undergrad program is more extensive than most.

Nutrition and Dietetics

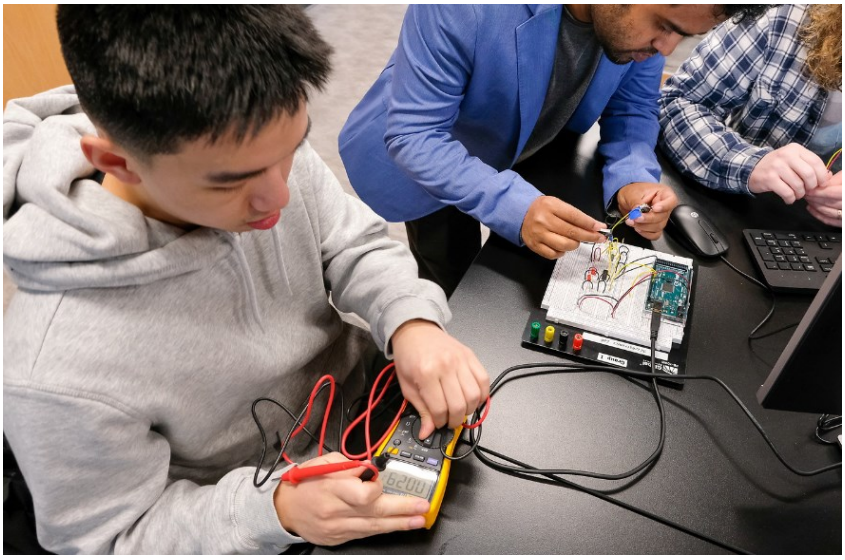
The UW-Green Bay Office of Marketing and University Communication is excited to announce that the new UW-Green Bay Human Biology Nutrition and Dietetics Emphasis webpages are live!

The field of nutrition is hot, growing in both interest and demand. The newly launched webpages help showcase the award-winning, evidence-based program that our university now offers. The nutrition and dietetics emphasis is the beginning of a pathway with graduate opportunities right here at UW-Green Bay. These new and updated webpages will help students easily find answers to questions they may have, and the resources they need to succeed!

Environmental Engineering Technology

Check out the first of three engineering technology majors to be redesigned: environmental engineering technology. How is this different from an environmental science major? What research projects are professors in this area involved in? How do you become a professional engineer and what careers are available in this area? All of these questions and so much more are answered on the new webpages.

UW-Green Bay's Three Engineering Technology Programs Receive ABET Accreditation



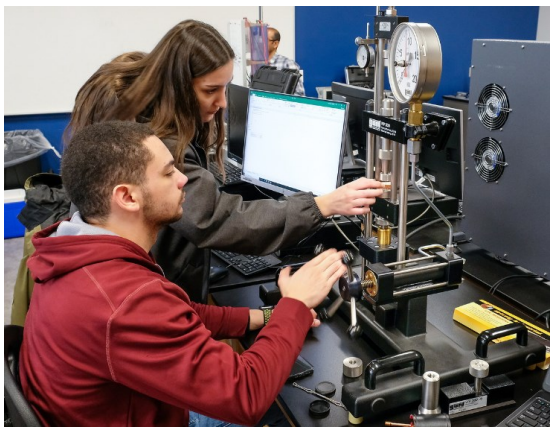
In the University of Wisconsin-Green Bay's Richard J. Resch School of Engineering, three engineering technology programs have received national accreditation. The bachelor's of science degrees in Electrical Engineering Technology, Environmental Engineering Technology, and Mechanical Engineering Technology have been accredited by the Engineering Technology Accreditation Commission of ABET, the global accreditor of college and university programs in applied and natural science, computing, engineering, and engineering technology.

ABET accreditation assures that programs meet standards to produce graduates ready to enter critical technical fields that are leading the way in innovation and emerging technologies and anticipating the welfare and safety needs of the public.

"Receiving this accreditation will benefit our current and future students enrolled in these programs," said John Katers, dean of the College for Science, Engineering and Technology which includes the Richard J. Resch School of Engineering. "Students seek out accredited programs in engineering and engineering technology, knowing that when they graduate from an accredited program, they will have a more direct path to receiving national licensure and certification. Additionally, it demonstrates to business and industry that graduates from these programs have received the best possible education based on a comprehensive, third-party review."

Sought worldwide, ABET's voluntary peer-review process is highly respected because it adds critical value to academic programs in the technical disciplines, where quality, precision and safety are of the utmost importance. Developed by technical professionals from ABET's member societies, ABET criteria focus on what students experience and learn. ABET accreditation reviews look at program curricula, faculty, facilities, and institutional support and are conducted by teams of highly skilled professionals from industry, academia and government, with expertise in the ABET disciplines.

The Resch School of Engineering is dedicated to providing the highest level of instruction combined with hands-on learning to give engineering students the knowledge and skills needed within today's regional workforce. "Obtaining this accreditation signifies that the Resch School of Engineering is committed to achieving the highest standards within these disciplines," said Katers, "and that graduates from our programs will be well-qualified innovators, with the skills necessary to have immediate impact." The ABET accreditation for these three programs demonstrates the commitment and dedication of our faculty and staff, with Dr. Patricia Terry serving as the Chair of the Resch School of Engineering, as well as from our community partners in industry.



ABET is a nonprofit, non-governmental organization with ISO 9001:2015 certification. It currently accredits 4,361 programs at 850 colleges and universities in 41 countries and areas. More information about ABET, its member societies and the accreditation criteria used to evaluate programs can be found at www.abet.org.

Science Saved a UWGB Professor's Life. Now It's His Mission to Inspire Future Innovators

By Danielle DuClos, Green Bay Press-Gazette

GREEN BAY — As an 18-year-old, Brian Merkel was ready to head off to college, the first in his family to pursue higher education.

He hadn't been feeling well that year, his senior year of high school, and brushed it off as not playing sports as much as he used to.

But he had a rash on his ankle. He decided to get it checked out by a dermatologist in his home state of New Jersey. He'd go get it examined, get some cream and then he'd be on his way to pick up his paycheck from work and hang out with his girlfriend.

It was the Friday before Mother's Day, 1984.

By Sunday, Merkel was getting his first round of chemotherapy.

He had acute myeloid leukemia, which meant he needed a bone marrow transplant if he had any hopes of surviving. In 1984, only two medical centers in the world were having success with the operation.

Merkel headed to Seattle to the Fred Hutchinson Cancer Center for treatment and waited to find a bone marrow match.

With the procedure in its infancy, finding donors was difficult. Luckily, Merkel's sister was a close enough match.

Complications from the transplant left him without the ability to eat or drink for two months. But the transplant worked, and he was in remission.

As Merkel's body adjusted to the transplant, he headed off to the University of Richmond a year after originally being diagnosed with cancer. His college years would be riddled with other diseases like pneumonia and meningitis as his compromised immune system tried to rebuild.

He had always been interested in science, and cancer reinvigorated his passion to pursue biology. Science innovation saved his life, and he wanted to learn more.

Now, Merkel has a doctorate in microbiology and immunology and is a professor at the University of Wisconsin-Green Bay, inspiring and teaching the next generation of science and medical researchers at both the college and high school levels.

"My survival is a living testament to the value of science and medicine, and how lucky am I to be able to pay this gift forward by helping these students that want to do this great thing with their lives," he said.

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It was during his Ph.D. program that Merkel found the thrill of teaching, and it took him by surprise, he said.

“I really am so excited and passionate about science — and even more so, passionate about conveying that excitement and sharing that information with others,” he said.

As the department chair of human biology at UWGB and with an appointment at the Medical College of Wisconsin, Merkel’s goal is to pass his love of science on to students and to help them achieve their professional aspirations.

He’s concerned about the shortages of healthcare professionals nationwide.

“Let's face it, it's hard to become a healthcare professional if you're not interested in science,” he said. “My real passion is to inspire and prepare the next generation of scientists and healthcare professionals.”

Merkel understands the challenges of going into a science or medical career without family role models. He was a first-generation college student himself.

“Much of what I try to do now as the chair of human biology is to make sure if you don't have a family member that's a physical therapist, a dentist, (medical doctor), a Ph.D., biomedical researcher, what have you, that as early as possible … you're going to be aware of the academic roadmaps … and those resources that you need to be aware of … so that you can be as successful and as competitive as anybody else.”

Throughout his 25 years at UWGB, Merkel has touched the lives of hundreds of students who still email him today to thank him for being their professor, champion and mentor.

One former student emailed him in 2019 thanking him for helping prepare her for veterinary school at UW-Madison.

“I just started my second year at UW-Madison Vet School!! (I DID IT!!!) I just wanted to reach out and express my gratitude for you,” she wrote. “... I am just feeling extremely grateful to you because I feel like I have such a great foundation for this year and I have the ability to help my fellow classmates understand the material because you taught so well and made learning more interactive.”

Merkel keeps all those emails, some dating to 1999, to help connect current students with alumni for networking and mentorship opportunities.

Getting students excited about science, technology, engineering and math can’t start in undergraduate or graduate school. As Merkel put it: It has to be as early as possible.

So he and his wife, Lisa, a teacher at Green Bay West High School, brought an international research initiative to Green Bay high school students. It’s called Tiny Earth.

Tiny Earth has high school and college students study antibiotic resistance and antibiotic discovery while connecting students with hands-on scientific research.

Launched at UW-Madison in 2018 by professor Jo Handelsman, Tiny Earth has since grown to include over 14,000 students worldwide.

Every week, West High’s Serious About STEM students go to the UWGB campus to conduct research and learn about the basics of microbiology, all while earning college credit.

On Dec. 9, the West High students, along with college students across northeast Wisconsin, will present their findings on antibiotic resistance at the Tiny Earth in Titletown symposium, the first time it’s being held in three years.

“They become inspired, and without inspiration, everything else is more difficult,” Merkel said. “It's really a transformative experience for (students who participate).”

New Toft Point Book Celebrate UW-Green Bay's "Eco-U" Roots

The Teaching Press at UW-Green Bay launched its newest book, an interactive nature journal inspired by Door County's Toft Point Natural Area, on December 12 at the STEM Innovation Center.

Spearheaded by graduate student Cayla Cavey, the project is a landmark collaboration between students and advisors in the UW-Green Bay Scientific Illustration Student Organization, regional poets and writers, University Archives staff, and the undergraduate editors of The Teaching Press. Dennis Rockhill, of The Einstein Project, supplied materials and formatting ideas.

Filled with original illustrations and poetry, the journal invites readers to record observations, sketch wildlife, and learn about flora and fauna not found anywhere else in the state.

"Our editors just ran with this idea," says Teaching Press Director Rebecca Meacham. "We thought, what better way celebrate our 'Eco-U' roots than with a book you can write in as you hike?"

Toft Point was entrusted to UW-Green Bay by conservationist Emma Toft in 1968, and it continues as a "living laboratory" and treasured natural area.

To learn more about The Teaching Press, visit https://www.uwgb.edu/teaching-press/.

UW-Green Bay Awarded over $101,000 for Freshwater Fishing Research

The University of Wisconsin-Green Bay has been awarded over $101,000.

The money comes from a statewide initiative backed by the Wisconsin State Legislature and Gov. Tony Evers aimed at tackling the state's Grand Water Challenges.

$7,800 of that grant will go toward the student-led study of the economic impacts of Wisconsin Fishing, while over $14,000 will go toward leveraging the strength of the Wisconsin Agriculture-Water Nexus Network (WAW2N) for transformative student experiences.

The remaining $79,000 is designated for the evaluation of downstream juvenile lake sturgeon passage through two dams on the Menominee River.

Emily Tyner, the director of Freshwater Strategy for UW-Green Bay said of the grant, *"The collaborative nature of these projects will expose students to the breadth of water-focused faculty and programs across the UW System."*

A Research Network at the Nexus of Water and Agriculture

Wisconsin's abundant rivers, lakes and streams helped the state become an agricultural leader. Yet agricultural processes, including irrigation and pesticide use, also greatly impact our state's water quality and quantity.

One of the biggest challenges facing Wisconsin is determining how to maintain the state's agricultural prominence while also ensuring plenty of safe water for drinking, recreational use, manufacturing and other uses.

Wisconsin's diverse geographic areas further complicate the water challenges at the nexus of agriculture and water. Interdisciplinary teams are needed to identify opportunities that improve both agriculture processes and water health.

The Wisconsin Agriculture-Water Nexus Network (WAW2N), established with funding from the Freshwater Collaborative of Wisconsin, is a cross-campus network of water researchers who are developing educational courses that will train students in agriculture-water management.

"We thought it would be good to introduce students to the water management issues across the state so they can be prepared to be employed anywhere in the state," says Stephan Gunn, assistant professor at UW-Green Bay and lead researcher on the WAW2N project.

In 2022, faculty from UW-Green Bay, UW-Madison, UW-Platteville and UW-Stevens Point developed a pilot three-day field trip course built around regional variations in Wisconsin agriculture. The 21 students who enrolled in the course met with professionals in water and agricultural industries in three areas of the state.

In northeastern Wisconsin, one of the most intensive dairy regions in the United States, students talked with farmers about phosphorus and agricultural runoff treatment and monitoring. In central Wisconsin, an important vegetable-growing region, they learned about irrigation and how it affects groundwater. And in southwest-southcentral Wisconsin, they discussed best practices for grazing along streams as well as processes that remove harmful nutrients from wastewater before it's released back into urban watersheds.

"Seeing the different soil and water issues across the state gave myself and other future natural resource managers a better feel for how certain issues carry over and differ from region to region," says Dane Friis, who is majoring in Land Use Management and Planning at UW-Stevens Point.

Friis found the interaction with students and faculty at other UW schools to be beneficial. He particularly enjoyed talking with agronomy majors from UW Platteville, noting that their insight helped him understand what farmers need to grow viable crops while implementing management practices.

With a second round of funding, the WAW2N will expand to include UW-River Falls and UW-Stout. Faculty at the six institutions will offer learning modules that dive into the specific challenges of each of the three regions through an online course. The online course will be open to students on any of the campuses. A one-credit course offered each semester will include a three-day field trip during which students will come together to explore a specific region in Wisconsin and meet farmers and people from organizations working in the area.

Students will be able to take one or more of the courses, giving them a greater understanding of the geographic issues and connections between agriculture and water.

"Wisconsin has very different water quality issues depending on the specific region," says UW-Madison student Micah Robinson, who participated in the pilot course. "Getting to see various regions gave me a broader understanding of water quality issues in the state, and better prepared me to solve unique water quality issues."

Lower Fox River Watershed Monitoring Program Receives Green Gifts From Cellcom

Cellcom has selected seven local nonprofits to receive a share of its annual Green Gifts, which invests money from recycled cell phones back into environmental projects. Awardees include Lower Fox River Watershed Monitoring Program administered by UW-Green Bay, Barkhausen Waterfowl Preserve, New Leaf Foods, Baird Creek Preservation Foundation, Green Bay Sail & Paddle, and Green Bay Botanical Garden.

The Lower Fox River Watershed Monitoring Program couples watershed education with the collection of top-quality scientific data. Currently ten high schools assist with monitoring tributaries of the Fox River. The program was awarded a $2,440 Green Gift to purchase testing materials for seasonal monitoring and wild rice restoration projects.

"The Lower Fox River Watershed Monitoring Program has produced 19 years of high-quality baseline data to inform our community about the health of the Fox-Wolf River Basin. The successful collaboration of UW-Green Bay, area high schools, and community partners has helped make valuable contributions to regional environmental protection and public policy," said Lynn Terrien, outreach and education coordinator for the program. "We're grateful for Cellcom's support through Green Gifts to continue to the program and inspire students to be the next generation of environmental leaders."

"UW-Green Bay Feels Like Home" Video Featuring CSET Student, Justice Saxby

UW-Green Bay's Justice Saxby considers UW-Green Bay her "home." As a double major in Environmental Science and Geoscience, Justice loves the park-like arboretum on campus, 'eco-friendly' attitude and how much she loves that her professors know her by name. Watch her video here!

Video Highlight: UW-Green Bay Master of Athletic Training Program

Madeleine Corbin is a graduate student in the Master of Athletic Training program. She loves that the hands-on skills learned in lab is complemented by high school, collegiate and clinical rotations, allowing her to develop her skills out in the field. After graduation, Madeleine Corbin hopes to work as a physician extender. Watch her video here!

Community Leaders Convene to Celebrate Water

Fifty years ago, the Clean Water Act was passed, and clean water took a turn for the better across the U.S., and in particular Northeast Wisconsin.

On Tuesday, October 18th federal, state, and regional leaders convened for water, to commemorate the milestone of the Clean Water Act, and to celebrate the 90th anniversary of NEW Water, the brand of the Green Bay Metropolitan Sewerage District. The Clean Water Act ushered in a new era to curb water pollution and was particularly directed at improving operations of wastewater facilities across the U.S., including NEW Water. NEW Water cleans wastewater for the region, so that people can flush the toilet, do their dishes, and run their businesses, using water whenever they want.

The event featured special messages from U.S. Senator Tammy Baldwin; U.S. Congressman Mike Gallagher; and Environmental Protection Agency Assistant Administrator – Office of Water, Radhika Fox. Event speakers included: Wisconsin Sen. Rob Cowles; Wisconsin Department of Natural Resources Secretary Preston Cole; Brown County Executive Troy Streckenbach; University of Wisconsin-Green Bay Chancellor Michael Alexander; University of Wisconsin-Green Bay Dean of the College of Science, Engineering, and Technology John Katers; and NEW Water Executive Director, Tom Sigmund.

“Water is essential for life, and it is our responsibility to protect this precious resource for future generations,” said Streckenbach. “Moving forward, access to fresh, clean, and reliable water will be an important global issue. It is opportunity to play an important role not only in protecting our waterways, but to research and develop solutions here in Northeast Wisconsin that will have a global impact on water security.”

The event was held at the Brown County STEM Innovation Center, which opened in late 2019, and is a partnership between UW-Green Bay and Brown County. The Center is home to UWGB’s Richard J. Resch School of Engineering, along with Brown County’s Land and Water Conservation Department, Extension Brown County, and the Einstein Project. With UW-Green Bay launching in 1968 and dubbed “Eco U,” many University professors and leaders have been involved in water pollution abatement efforts, a tradition which carries on today. UW-Green Bay Professor Emeritus Harold “Jack” Day was former NEW Water Commission President.

“Educating our students and the community about water and the tremendous impact accessibility to clean water has in our region is essential to our mission,” said UW-Green Bay Chancellor, Michael Alexander, “especially since Green Bay is home to the largest freshwater estuary in the world. We are proud to join our community partners to celebrate and to continue to work together to protect this valuable resource.”

NEW Water partners with University of Wisconsin-Green Bay on research, education and sustainability initiatives. NEW Water partners with Brown County on pollution prevention initiatives including household hazardous waste, and watershed efforts, to more cost-effectively protect area waters.

A theme of Tuesday’s event was the critical role partnerships play in protecting our most valuable resource, water.

Last year, in a unique partnership, Brown County, the City of Green Bay, and NEW Water teamed up with Green Bay Packaging on their innovative water reuse system. It allows the mill to operate with the water it needs without discharging a single drop of wastewater into the Fox River. Learn more about this first-of-its kind, circular reclaimed water system here.

In addition to cleaning and returning water to Green Bay Packaging, NEW Water cleaned about 41 billion gallons of water for Northeast Wisconsin last year.

“In Northeast Wisconsin, we are fortunate to have so many community leaders who are committed to protecting water. It is through this power of partnerships that we can more cost effectively protect our precious water resources,” said Tom Sigmund, NEW Water Executive Director. Sigmund is the current President of the National Association of Clean Water Agencies as well. “As we look to finding solutions for the complex water challenges of the future, partnerships will be more critical than ever.”

‘A Star Rises’ With Fall Commencement Speaker Alex Zakutney

As a rule, a laundry-list of distinctive achievements is standard fare for a commencement speaker. But one of Alexandra Zakutney’s achievements stands alone – she is the first Phoenix who’s risen to the challenge of preparing for medical school while also as a D1 volleyball player, achieved 1,000 kills to her name.

But she won’t take all the credit herself. “To get 1,000 kills you need a good setter.” Another Zakutney fun fact: she’s a native French speaker, and also completely fluent in English. “My whole education was in French. Green Bay was the first school where I studied in English. ”Plus she blends Canadian politeness with Wisconsin nice. “I guess I do say ‘pardon’ a lot.”

The Zakutney family has devoted much of their lives to the world of collegiate athletics. Her mom and dad met playing volleyball, her brother is a gymnast and her sister also plays volleyball. Zakutney’s personal accolades on the UW-Green Bay women’s volleyball team merit special recognition on their own—named to the Horizon League’s All-Freshman Team in 2018-19, Horizon League’s First Team in 2020, ’21 and ’22, Player of the Week four times, the All-Tournament Team in 2022 and selected to the All-Academic Team three consecutive years (an honor awarded to a limited number of athletes.)

Zakutney grew up in Ottawa, Ontario, a 777-mile trek east skirting three of the five Great Lakes. In high school, she was a rising talent in Canada, but her club didn’t play in a lot of American tournaments, so she flew below the radar in the states. In fact, it was a fellow Canadian on the Green Bay team that made her connection with the coaches.

She admits to being surprised being recruited by Green Bay. “I had a lot of offers in Canada, so I really wasn’t planning to take the leap and go to a different country.” But her brother had taken the leap earlier, attending Penn State to participate in gymnastics. And while Penn State may have the edge in total enrollment, UW-Green Bay did have its own qualities that attracted Zakutney.

“I also knew they had a really good human biology department. That’s really what I wanted to study in college. I was interested in the science aspect.” Seems the health-sciences also ran in the Zakutney family. Her mom is an occupational therapist and dad’s Senior Vice President, Digital Health and Cardiac Technology and Chief Information and Technology Officer at the University of Ottawa Heart Institute. So, growing up, she was already familiar with hospital settings, but in the spring of 2018, her medical experiences were about to become far more personal.

She was starting as a freshman, which was unusual in itself, playing UW-Madison. “First point of the game I went to hit the ball, trying to get a kill, tilted my body slightly, landed and just heard a big pop.”

That “big pop” was a torn anterior cruciate ligament, medial collateral ligament, plus the lateral and medial meniscus in her left knee. She was injured in March, waited until June to have surgery, and began a year-long rehabilitation. Then in 2020 COVID hit and everyone was sent home. She returned to Ottawa—and an uncertain future. “It was kind of nerve-wracking,” Zakutney recalls, “because I didn’t know if they would let international students return.”

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But return, she did—both to Green Bay and to volleyball, with the support of family, friends, coaches, teammates and professors. “I was really lucky to be part of a program that appreciates everyone on the team, even when you’re hurt.”

For Zakutney it was never about the size of UW-Green Bay, but the generous spirit that defines being a Phoenix. As she explains it, “It’s not a very big school, but I’ve gotten really close to the professors. They really do want to help you.”

And adding to this already long list of achievements, there’s one more twist in Zakutney’s tale (though, thankfully, it has nothing to do with a knee.) She was born with a hearing loss and has been wearing hearing aids since the age of two, which brought its own uncertainty and challenges. “I was pretty nervous about how I would do in college.” Zakutney recalls, “If I would have trouble hearing the professors, if I would have to ask for special assistance and how difficult that would be.”

Added to that challenge was missing classes because of her volleyball commitments, knowing that communicating with her professors was even more essential. Yes, she had doubts, but never let that hold her back. “I decided just to take the leap. Try something new and get out of my comfort zone. Now here I am, four and half years later, ready to graduate!”

As for the future? “I’m currently studying for the MCAT. That’s a lot of brain power. But that’s something I want to do so I’m really determined to achieve it and see where it takes me.”

Proof you can’t keep a good Phoenix down.

UW-Green Bay Research Featured in CSA News

The CSA News featured an article written by UW-Green Bay researchers in the November/December edition. Photos from the university were used and Jacob Derenne, former UW-Green Bay students is featured on the cover page.

Professor and Extension Specialist, Kevin Fermanich (Natural & Applied Sciences), Assistant Researcher, Molly Meyers (Environmental Management & Business Institute), Associate Prof. Karen Stahlheber (Biology), and Cofrin School of Business Dean, Mathew Dornbush, co-author a peer-reviewed article in the Journal of Environmental Quality. The article, “Challenges in linking soil health to edge-of-field water quality across the Great Lakes basin,” includes co-authors from Purdue University Agronomy Department, the United States Geological Survey (Upper Midwest Water Science Center) and USDA Natural Resources Conservation Service (Resource Assessment Branch, Beltsville, MD). The article will be part of a special section in the journal on “Exploring the Soil Health-Watershed Health Nexus.” The work is part of an ongoing study that received renewed funding in 2020 through the Great Lakes Restoration Initiative and USDA.

You can read the article here.

Geoscience and Water Science Students Present at National Conference

Three UW-Green Bay undergraduate students presented posters at the Geological Society of America – Connects 2022 National Conference on October 8-12, 2022.

Two of the students, Justice Saxby and Arianna Hilbert, were supervised by Geoscience Professor John Luczaj and presented topics related to water-rock interaction in carbonate rocks from south China. Their work was part of a 3-year NSF-REU grant.

Another student, Kyle Chaudoir, was supervised by former Water Science faculty member Kelly Deuerling on water quality in a karst aquifer near the Ahnapee River.

Student Poster Titles:

Justice Saxby: Analysis of Carbonate Diagenesis on the Great Bank of Guizhou (South China) Using Geochemical, Geothermometric, and Geochronologic Techniques.

Arianna Hilbert: Mechanisms for Dolomitization of the Lower Triassic Anshun Formation of the Yangtze Platform: A Case for Regional High Temperature Dolomitization in the Nanpanjiang Basin, South China.

Kyle Chaudoir: Characterizing Nutrient Release and Relative Storage Times in an Unconfined Karst Aquifer in Northeast Wisconsin. Kyle was also coauthor with Kelly Deuerling for an oral presentation titled "A Case Study in Local Management Practices: Sediment and Nutrient Mobilization During Reservoir Drawdown in Door County, Wisconsin."

Professors Holly and Forsythe Publish Capstone Project Alongside Environmental Science Students

UW-Green Bay's Michael Holly, environmental engineering professor, and co-authors recently published a paper on modifying waste media for removal of phosphorus from agricultural runoff. Data for the study was collected by the Spring 2021 environmental capstone class and two environmental science students, Camryn Swan and Keenan Leonard, participated as co-authors for the publication. The project, funded by the Freshwater Collaborative of Wisconsin, was part of a collaborative effort including researchers at UW-Platteville and UW-Milwaukee.

"Common Buckthorn Engineered Biochar (Rhamnus Cathartica), Calcined Quagga Mussel Shells (Dreissena Rostriformis), Pickled Steel, and Steel Slag as Filter Media for the Sorption of Phosphorus from Agricultural Runoff" is the first effort by Prof. Holly and collaborators to modify waste residuals for use as reactive media for phosphorus removal from wastewater. Waste residuals used to remove dissolved phosphorus and reduce eutrophication would promote a circular economy. Results from the study are part of a larger effort by UW-Green Bay and collaborators to study agricultural runoff treatment.

To read the full article, click here or scan the QR code.

Faculty Recognition/Achievements

Congratulations to **Mike Holly** for his research on anaerobic digesters being referenced in an article by *Inside Climate News.*

Congratulations to **Maruf Hossain** for his publication in *Institution of Engineering and Technology (IET) Generation, Transmission, and Distribution* entitled "Three-phase algorithm for independent single-phase grid frequency estimation under grid disturbances."

Congratulations to **Robert Howe** on his retirement after working for UW-Green Bay for 38 years and leading the Cofrin Center for Biodiversity since 1999. He has positively impacted thousands of people, animals, and plants and truly made his mark on conservation.

Congratulations to **Pieter deHart** for his publication in the *Journal of Fish Biology* entitled "Isotopic niche alteration of a predator fish in dammed Amazonian black-water river" and *PeerJ—Life & Environment* entitled "Impacts of river fragmentation on limiting individual dietary specialization of Amazonian predatory fish."

Congratulations to **Mandeep Singh Bakshi** for his publication in *ACS Sustainable Chemistry & Engineering*.

Congratulations to **Upal Mahfuz** on being featured in STEAM Engine: Sustainable Infrastructure and Futuring, an event that showcases individuals in our region who are seeking new horizons in STEAM.

Congratulations to **Cassie Groeschl** and Zach Groeschl on their recent addition to the family. Evie Lynn was born on September 23, 2022.

Congratulations to **Samantha Betancur** and Michael Betancur on the birth of their son, Remington "Remi" Robert, who was born on October 9. 2022.

Manitowoc County Ag Educator Happy With Water Quality Conversation Locally

The Manitowoc County Ag Educator has nothing but good things to say about water quality locally.

Angie Ulness attended the 2022 Lakeshore Water Summit last Wednesday, where she said they talked about emerging trends in Manitowoc County stream quality. She told Seehafer News, "I was so impressed with the six interns and their reports from UW-Green Bay about the quality of the streams in Manitowoc County."

Ulness said that these young people are a good encapsulation of the care that goes into the Manitowoc County Watershed." In Manitowoc County, you have a lot of people in the community that really care about water quality all the way down to soil health," she explained. "It's really reassuring that these six interns have so much interest in the water and the quality of the water in Manitowoc."

The summit was hosted by the Lakeshore Water Institute, which is a collaborative partnership between UW-Green Bay Manitowoc Campus, and the Lakeshore Natural Resource Partnership.

Athletic Trainers Help Solve the Patient Care Crunch

Without a doubt, the medical community needs help. In a recent study from the Journal of General Internal Medicine, authors of the article, Revisiting the Time Needed to Provide Adult Primary Care, explained that physicians would need approximately 26.7 hours each day to provide the appropriate care to patients, based on the U.S. Preventative Services Task Force guidelines. With only 24 hours in each day, something's got to give. Many times, it's patient care. What patients need—and should expect—is their doctor taking the time to answer questions. Athletic trainers can provide physicians with the help they need.

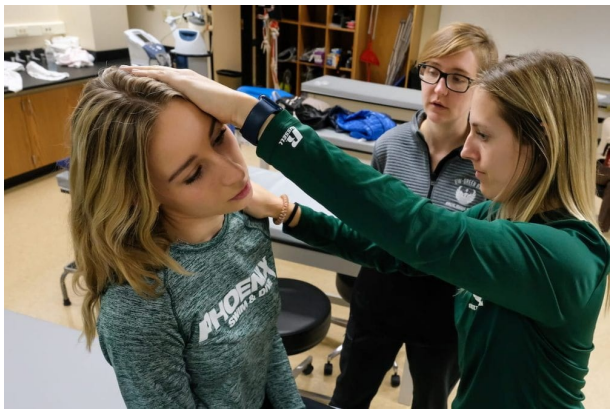
Many people may think of an athletic trainer as someone running onto the field to assess an athlete that's down, and assisting them back to the sideline. In fact, athletic training has evolved a long way from the sidelines. Today, an athletic trainer may be the first person a patient sees at their doctor's appointment. In this "physician extender" setting, an athletic trainer is charged with doing the initial assessment, gathering pertinent information and then working with a physician to share ideas and potential treatment options for the patient.

And athletic training students are seeing value in that new role option. "I love working with the variety of patients," says Madeliene Corbin, a UW-Green Bay masters of athletic training student in her final year of the program. She's participated in a number of clinical rotations to earn her degree, including time assessing sports injuries both at the high school and collegiate level. But her favorite clinical experience was her work as a physician extender. "We can see anything from a 10-year old soccer player with an ankle injury to a 72-year old woman who is getting her physical. We aren't just helping one specific population but helping everyone."

While shadowing an orthopedist's physician extender, Corbin noticed the collaboration that happens between the physician and their physician extender. After the initial assessment, the extender, "talked with the doctor and gave her opinion on what was going on with the patient. Maybe they are having sleep issues or experiencing anxiety and possibly need a mood stabilizer prescribed," says Corbin. "Together they return to the patient's room and the physician can spend more time with the patient talking through next steps, share the athletic trainer's insights and how they can help, and how to best care for themselves and get better."

An athletic trainer as a physician extender can give physicians more time to help patients understand their diagnosis, the proper next steps for care, and provide much needed perspective on expectations. Corbin also shares that through her athletic training curriculum, she has learned what it takes to be the first person a patient sees. "We do the assessment, patient history and initial intake," says Corbin. "And will go to the physician and explain what we've learned," providing value-added information for physicians on what the patient might be experiencing.

Immersive clinical options for Master of Athletic Training students, including the physician extender, are the norm at UW-Green Bay. Program professors have developed positive, collaborative relationships with local clinics, hospitals, school districts, and sports teams as well as manufacturing facilities and small businesses. Students have a number of options to consider based on their talents and interests in the program.



"We help students find the best fit for their immersive experience," says William Gear, assistant professor and director of the Master of Athletic Training program. "Students have a healthy amount of input (into the program) including where they want to go throughout the country."

In fact, last year one UW-Green Bay Master of Athletic Training students worked with a club rodeo team at New Mexico State University. "We want to ensure they have an immersive experience that helps them with their future career path," Gear said.

The traditional job for an athletic trainer is evolving, and Corbin and her classmates are ready to take on what's next. "It's cool to see how far athletic training has come from sports medicine," says Corbin. "Now it's everywhere from aeronautics to pediatrics—in all these different industries that now see the need for athletic trainers."

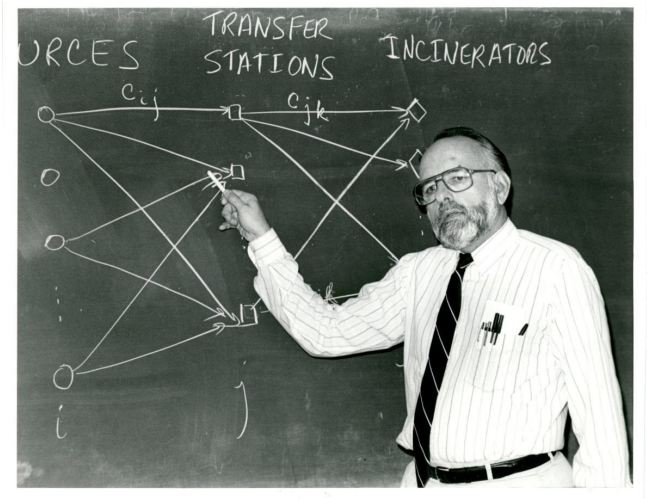
‘Eco U’ Once Again Listed in Princeton Review’s 2022 Guide to Green Colleges

UW-Green Bay continues as one of the 455 most environmentally responsible colleges in the U.S. and Canada as recognized by Princeton Review.

Since the early years of UW-Green Bay being dubbed Eco U – a legacy we cherish, the focus of the university has expanded and changed. However, the value of sustainability and environmental stewardship continues to be reflected in the university today, from its outdoor spaces and buildings to its academic programs, general education policies, environmentally focused student organizations, and its recent naming of sustainability as a university strategic priority.

Daniela Beall, Sustainability Coordinator for the university is excited by the continued commitment from leadership at UW -Green Bay. “We are working to establish a National Estuarine Research Reserve, install EV charging stations,” said Beall, “and expand compost collection in housing, offices, and at events.”

UW-Green Bay and Its Extended Community Mourn the Loss of Professor Robert Wegner



Prof. “Bob” Wenger passed away unexpectedly on Monday, Dec. 19, 2022. Prof. Wenger served the UW-Green Bay community as a professor of mathematics in Natural and Applied Sciences for 30 years, joining the University as an assistant professor of mathematics in 1969, and achieving the title of full professor in 1985.

That same year he was awarded the Founders Association Award for Excellence in Institutional Development. Faculty colleagues noted in his 1985 Founders Award nomination, “As chair of mathematics, Professor Wenger has performed his duties with a sense of responsibility and integrity that is, in my opinion, unmatched by any individual I have ever known.” Among the many recognitions he received was the Barbara Hauxhurst Cofrin Professorship of Natural Sciences (in 1997).

He was also a leader of the International Visiting Scholars Program which brought people from around the world to the Green Bay area to share their expertise in a vast number of fields. He continued his contributions to UW-Green Bay even after retiring and achieving professor emeritus status in 1999—mentoring students, being involved in research and writing, and continuing his work on environmental issues, specifically water-quality issues in Wisconsin and around the world. His specialty was applying mathematical principles and techniques to a wide range of scientific problems with practical real-world applications.

He, along with Prof. Jack Day were honored with the Founders Association Award for Collaborative Achievement in 2005, recognizing their work to launch the groundbreaking International Visiting Scholars Program, the first formal joint venture between UW-Green Bay and St. Norbert College. He served as chair of an interdisciplinary science unit for many years and was engaged in university governance as well. His obituary notes that he was a kind and gentle man, well-respected by administrators, faculty, and students.

According to friends, he was appropriately characterized as one who “never crossed paths with someone without showing them respect, kindness, and curiosity.” He was a tremendous supporter of Green Bay basketball, especially the women’s program. A celebration of life will be held at the Mauthe Center on March 25 at 1 p.m. To send online condolences, please go to www.PfotenhauerFuneralHome.com. Pfotenhauer Funeral Home & Cremation Services, East-Town, is assisting the family. See the full obituary.

UW-Green Bay Awarded 2022 Climate Changemaker Award

Since its beginning, UW-Green Bay has been committed to protecting the natural resources that surround the university. Nestled on the shores of the bay of Green Bay – part of the largest freshwater system in the world – university researchers have taken full advantage of their location. And now, the recent research collaboration with local technology company Cellcom is receiving national attention.

UW-Green Bay researchers, with support from the wireless technology experts at Cellcom, have deployed buoy platforms armed with wireless high-tech sensors in lower Green Bay, to track water clarity and identify pockets of low oxygen in the bay. University researchers believe the collaboration will yield important insights to help protect the region's freshwater ecosystem.

As a result of this innovative work, on Monday, January 9, UW-Green Bay was presented the 2022 Climate Changemaker Award by CTIA Wireless Foundation. The Climate Changemaker Awards are given to researchers and organizations using wireless technology to address climate change.

"CTIA Wireless Foundation is proud to award the University of Wisconsin-Green Bay with a 2022 Climate Changemaker Award. We are thrilled to recognize the work they are doing with Cellcom, to leverage the power of wireless to monitor water quality in the bay of Green Bay," said Meredith Attwell Baker, President of CTIA Wireless Foundation and President & CEO of CTIA.

John Katers, Dean of the College of Science, Engineering and Technology spoke to the university's "Eco-U" roots, noting that while great strides have been made to reduce pollution and preserve the quality of the bay, there is much work to be done. "UW-Green Bay continues to take on a leadership role," said Katers. "Our ongoing work, combined with the recent addition of the Richard J. Resch School of Engineering, provides the opportunity to utilize new technologies to create what I describe as a more modern version of Eco-U."

Cellcom CEO Brighid Riordan echoed the importance of preserving this incredibly valuable natural resource. "As a local provider, we care about the community and the health of our local environment," said Riordan. "Being able to use a leading technology to support critical research that can make a difference for the environment was an incredible opportunity for us."

Cellcom is providing the network that supports the sensors used in the research projects. Cellcom built a LoRaWAN network around the bay for the university specifically for this research. The network is paired with long-life battery-powered sensors to monitor parameters in real-time and over an extended period time, making it easier to collect data, map trends and empower research and action.

"Data and monitoring can help manage, restore and protect this vital resource. Combining the University's commitment to climate research and Cellcom's passion for wireless technology is a powerful combination," continues Riordan. "The research the University is embarking on is world changing."

Associate Dean of the College of Science, Engineering and Technology, Mike Zorn spoke to the impact on students that this award and accompanying $25,000 grant will have on the student research experience. "It will also allow us to provide our students high impact research experiences, working on an important real-world problem that affects our region," said Zorn.

Collaboration, innovative research and the drive to improve the community are what make this recognition extra special. "When I became the founding Dean of the college in 2016, I shared a vision that focused on people, programs, and partnerships," said Katers. "This CTIA Wireless Foundation Climate Changemaker Award demonstrates that those three areas continue to be important. In particular, it takes great people to make partnerships work."

Human Biology Faculty and Staff

Resch School of Engineering Faculty and Staff

Natural and Applied Sciences Faculty and Staff

College of Science, Engineering and Technology Staff Contact Information

John Katers, Dean
katersj@uwgb.edu
920-465-2278

Amanda Nelson, Associate Dean
nelsona@uwgb.edu
920-465-2197

Mike Zorn, Associate Dean
zornm@uwgb.edu
920-465-5758

Nora Kanzenbach, Advising Manager
kanzenbn@uwgb.edu
920-465-2177

Jacob Depas, Director of Development
depasj@uwgb.edu
920-465-5025

Samantha Betancur, Camps and Outreach Coordinator
betancus@uwgb.edu
920-465-2591

Amy Ibuaka, Dean Assistant
ibuakaa@uwgb.edu
920-465-2104

UNIVERSITY of WISCONSIN GREEN BAY

College of Science, Engineering and Technology
2420 Nicolet Drive - ES 317
Green Bay, WI 54311

Phone: 920-465-2104
E-mail: cset@uwgb.edu

UW-Green Bay College of Science, Engineering and Technology