University of Wisconsin Green Bay

COLLEGE OF SCIENCE, ENGINEERING & TECHNOLOGY

SPRING 2022

NEWSLETTER

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A MESSAGE FROM THE DEAN,

JOHN KATERS

The spring commencement ceremony represents the end of the academic year as we celebrate the accomplishments of our most recent graduates, but also provides an opportunity to reflect on the past, present, and future. Jordan Cioni, the student commencement speaker and new mechanical engineering graduate, gave an excellent speech highlighting the power of community, with our UW-Green Bay community now stretching from Marinette to Sheboygan. Jordan referenced the fact he was graduating from the Resch School of Engineering, which would not have been possible without the support of the community, and that his degree option did not exist just a few short years ago. This newsletter highlights Jordan, as well as many others that have achieved remarkable successes over the last year. From new bridges for the Cofrin Arboretum, to new classroom activities like the Chemistry Lab Escape Room, to new donors and scholarship recipients, to our many accomplished students and faculty, to new babies, I hope you find this issue of the newsletter to be interesting and uplifting as we continue to rise together as a Phoenix community. In summary, it has been another great year in the College of Science, Engineering, and Technology and freshman registration is starting soon as we welcome the next group of Phoenix!

CSET Alumnus Receives 2022 Distinguished Alumni Award

Congratulations to Gregory Neuschafer ’72 (Environmental Science) on receiving this year’s Distinguished Alumni Award!

Gregory Neuschafer ‘73 (Environmental Science) is a retired US Navy Captain Oceanographer. He followed his bachelor’s degree with a Masters of Science in Marine Geology through a combined program at UW-Milwaukee and Duke University Marine Laboratory. After graduate school, he was commissioned an Ensign and designated an oceanographer in the US Navy. His Navy career began as an Ocean Survey Officer aboard Oceanographic Unit 5 conducting nearshore hydrographic surveys to update navigation charts in the Caribbean. His next assignment was as executive officer of Oceanographic Unit 1 conducting integrated bathymetric, geomagnetic and gravity surveys in the Davis Strait between Canada and Greenland. He enjoyed 30 years of adventure rotating between operational, research, and development assignments aboard ships and aircraft, commanding several units. Since retirement, he has worked as a consultant to a mid-water-depth oyster farm experiment in the Chesapeake Bay. Last year, he delivered to UW-Green Bay, a real-time searchable electronic library composed of 28,000 plus pages of literature, video and audio files of court cases, government and civilian activities related to the Fox River – Green Bay PCB cleanup. He has created and sponsors a water forensics laboratory at his high school, and has helped UW-Green Bay’s Lower Fox River Watershed Monitoring Program.

Gregory is pictured on the far left along with the other ‘21 and ‘22 award recipients.

Student Richard Perschon of Professor Holly’s Research Lab Wins AWRA Student Presentation Award

UW-Green Bay student Richard Perschon, mentored by UW-Green Bay Assistant Prof. Michael Holly (Environmental Engineering Technology), won best student presentation at the Wisconsin Section – American Water Resources Association (AWRA) annual conference. Richard presented on Biosolid Land Application and the Occurrence, Fate, and Mitigation of Per- and polyfluoroalkyl substances and Nitrate. Each year the best student presentations at the conference are selected for an award. There were a total of 35 student presentations or posters at the 2022 annual meeting of the AWRA Wisconsin Chapter. Each student was evaluated by three professional AWRA members.

U.S. Patent Issued to Professor Maruf Hossain

Congratulations to UW-Green Bay Prof. Maruf Hossain and WiSys on being awarded a U.S. Patent entitled “Integrated Vertical Axis Wind Power Generation System.” Hossain has invented a 14-novel claim “system of wind turbines that can catch wind blowing from any direction and eliminates the need of a yaw system. This system allows for mechanical maintenance at the ground level to increase worker safety.” WiSys accepted Hossain’s invention into its portfolio in 2017 and has “been working diligently since then to secure intellectual property protection, support the development of the technology and identify industry partners suitable to license this novel wind turbine system.”

Student Commencement Speaker Jordan Cioni Finds Shocking Results at UW-Green Bay

These days, strolling out of UW-Green Bay with a degree in engineering is a very good thing. With the rapid growth of high-tech manufacturing in our region, most graduates can just keep walking into extremely well-paying jobs and flourishing careers. But Jordan Cioni marches to the beat of his own sine wave.

“Once I polish off this engineering degree it’s off to River Falls.” To pursue a degree in physics.

Physics? While one of the most elegant of intellectual pursuits, (Cioni calls it “the science of all sciences”), physicists typically do not command the income-generating potential of engineering. And there are a lot fewer of them.

If UW-Green Bay had a physics major that would have been his first choice. The primary influence to embrace engineering was something far more impactful than earning potential—the personal attention and professional camaraderie of Jagadeep Thota, associate professor and chair of Engineering and Engineering Technology. “I’m working with Professor Thota researching shock mitigation.” Temptingly described in the professor’s bio as *the analysis of structures under severe loading conditions such as explosions and projectile impacts.* Does that mean they get to blow things up? “We do not. I was kind of hoping we could.” All shocks occur as computer simulations and equations.

Professor Thota’s admiration for his student is obvious. “Jordan is one of the most well-rounded and self-motivated students I have come across in my more than a decade of higher education experience,” he noted in a letter of recommendation.

Cioni concedes he had no idea what his major might be or even if college was the right choice. “For my first two years in college, I was pretty much lost and spinning my wheels. I could have put on a master’s class on how to disappoint parents.”

That state-of-affairs hardly seems possible for someone whose current resume includes a 4.0 average in his engineering classes, presidency of UW-Green Bay Engineering Club, selection to present at 18th Annual Research in the Rotunda conference and an Elijah high-altitude balloon scholar—a NASA sponsored Wisconsin Space Grant Consortium funded research scholarship. Along with conducting research and publishing work with Thota.

For Cioni, math has always been a true love/hate/love relationship. “When I was walking out of high school, pre-calc was my last exam. I told myself ‘I’m never going to do math again!’ Then two years later I was sitting in statistics class as a sophomore college and I realized, ‘Man, I miss math!’”

As an engineering major, he made up for lost time, taking Calculus I and II as summer classes. Then something remarkable happened, the spinning wheel achieved traction. “When I was about two weeks into the summer classes, I realized this was precisely where I needed to be because it was so much fun.”

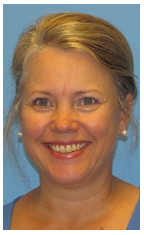
And, he had found his flock. “With engineering classes, it’s no secret that they can be really challenging. There’s a lot of classes. You see each other in literally all the same classes for the next three years. You start working together, collaborating and helping each other out.”

But there was still the siren’s call of physics to contend with. He considered transferring for a time, And that’s when Professor Thota had his biggest impact. “He made me the one offer I couldn’t refuse—the chance to do research with him.”

Next fall, the dream of studying physics will become a reality at UW-River Falls. But at this moment, Cioni is convinced it wasn’t just science that saved his college career, but UW-Green Bay’s spirit of community. "I really credit this school, all the people, all the professors, all the students for creating this supportive environment that allowed me to grow, make better decisions, and have a lot more hope for this future.”

Faculty Recognition/Achievements

Congratulations to **Keir Wefferling** on being awarded $10,000 from the Milwaukee Public Museum for the project entitled “MPM community science fieldwork for biological inventories of sites including Wequiock Creek, Kingfisher Farm, and the Cofrin Arboretum.”



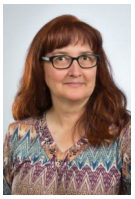
Congratulations to **Debra Pearson, Georgette Heyrman, and Paul Mueller** on being awarded $10,000 from the Research Council for their project entitled “Nutritional influences on ovarian cancer cells.”

Congratulations to **Shawn Malone** on being awarded $6,500 from the Research Council for his project entitled “Plate tectonic origins and evolution of the eastern Marshfield terrane (central Wisconsin): Insights from the whole-rock petrography, geochemistry, and zircon petrochronology.”

Congratulations to **Carlos Ulises Gonzalez Valle** on being awarded $6,500 from the Research Council for his project entitled “Development of efficient liquid cooling solutions for high-power electronics.”


Congratulations to **Mike Zorn and Iftekhar Anam** on being awarded $6,000 from the Research Council for their project entitled “Developing a LoRaWAN environmental sensor network on the Lower Fox River and the Bay of Green Bay.”

Congratulations to **Mandeep Bakshi** on being awarded $7,700 from the Research Council for his project entitled “Surface active magnetic nanomaterials for water purification.”



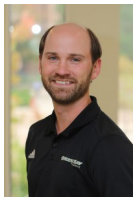
Congratulations to **Lisa Grubisha** on being awarded $5,776 from the Research Council for her project entitled “Wild rice conservation genetics.”

Congratulations to **Patrick Forsythe** on being awarded $56,000 from the GBMSD for the project entitled “Biological data and collection Dutchman and Ashwaubenon watersheds 2022”

Congratulations to **Karen Stahlheber** on being awarded $8,576 from the Research Council for the project entitled “Within-species variability in clonality and potential effects on plant communities during ecological restoration.”

Congratulations to **Jian Zhang** on being awarded $4,000 from the Research Council for the project entitled “Development of hybrid techno-economic optimization method for distributed energy systems based on lifecycle environmental and economic impacts.”

Congratulations to **Doug Brusich** on being awarded $5,242 from the Research Council for the project entitled “Determination of the role of age and nucleoskeletal factors on mortality and seizures following traumatic brain injury (TBI).”



Congratulations to **Chris Houghton** on being awarded $9,988 from the Research Council for the project entitled “Hypoxia in Lower Green Bay: exploring the understudied dead zone at our front door.”

Congratulations to **Carly Kibbe** on being awarded $5,000 from the Research Council for the project entitled “The role of RAGE signaling in glucotoxicity of pancreatic beta-cells.”


Congratulations to **Becky Abler and Rick Hein** on being awarded $4,924 from the Research Council for the project entitled “Analysis of the impact of coastal wetland restoration and land use on water quality in the Little Manitowoc River.”

Congratulations to **Mahmoud Hammouri** on co-authoring a publication in Computational Materials Science, entitled “Existence of two-dimensional hole gas at the interface of Bi(Zn, Ti)03/SrTiO3 heterostructures: An ab-initio study.”

Congratulations to **Keir Wefferling** on being awarded $9,021 from the Research Council for the project entitled “Photographic atlas of peatland bryophytes of Northeastern Wisconsin.”

Faculty Recognition/Achievements Continued

Congratulations to **Mohammad Upal Mahfuz** on his three publications at the 12th IEEE Integrated STEM Education Conference entitled “Design and development of a smart cities online education general course for undergraduates,” “An integrated approach to sustainability-focused instruction in undergraduate engineering curricula,” and “An integrated project-based learning approach in engineering technology undergraduate curricula.”

Congratulations to **Kevin Fermanich, Molly Meyers, and Karen Stahlheber** on their publication in the Journal of Environmental Quality entitled “Challenges in linking soil health to edge-of-field water quality across the Great Lakes Basin.”

Congratulations to **Brian Merkel** on accepting the invitation to becoming one of a few to teach the Tiny Earth curriculum to other educators. Merkel will go through two summers of training to equip him to co-lead or lead Tiny Earth trainings.

Congratulations to **Karen Stahlheber and Kiel Nikolakakis** on their recent addition to the family! Lucas Nikolakakis was born on April 27, 2022.

Congratulations to **Gaoci Lo-Yang** and Lue Yang on the birth of their baby, Akari Hnubci Yang, on March 12, 2022.

A Fun Way to End the Semester: Chemistry Lab Escape Room

To round out a busy and trying semester, Associate Professor Breeyawn (Bree) Lybbert (Chemistry) created a chemistry lab escape room experience for her CHEM 109 (Survey of General, Organic, and Biochemistry lab) students at the Manitowoc and Sheboygan campuses.

Students in the class showed up to lab the last week of classes and were greeted by Prof. Lybbert and a generously caution-taped lab door along with signage announcing they were about to enter a Chemistry Escape Room. Students were given a small notebook with rules for the escape room and a periodic table for reference. With a quick explanation of the rules and safety precautions, Prof. Lybbert unlocked the door, started the 60-minute timer displayed on the screen along with appropriate mood music, and the game was on! The students were allowed to work together or solo to find and solve the puzzles hidden (and not-so-hidden) around the room, all while taking detailed notes of any clues and codes they found.

Some puzzles/clues required chemistry knowledge and skills from their time in the chemistry lab all semester, whereas other puzzles/clues were more general chemistry knowledge. Students were initially confused and cautious in how they scoured the lab for clues. A hint given by Prof. Lybbert about 15 minutes into the game, allowed students to open their first puzzle box, which lead to more clues and codes. The opening of the first box seemed to ignite everyone’s excitement and the lab subsequently got noisier as students started working together more, shouting things across the room, and whooping with delight when another lock was opened.

Both groups of students successfully completed the final puzzle in just under 45 minutes and successfully “escaped the chemistry lab” for the semester. The idea for creating a chemistry escape room lab experience was based on a 2019 Journal of Chemical Education Article (J. Chem. Educ. 2019, 96, 5, 955–960). Inspired by the article, Prof. Lybbert decided to try her hand at creating a similar experience for her chemistry students. Some similar puzzles were used but many were created and adapted based on the chemistry content and skills students learned across the semester.

Materials and supplies not normally found in the chemistry lab (such as small lockable boxes, luggage locks with programable codes, caution tape, memo notebooks, and prizes) were purchased for under $100. Many of the supplies will be reused year after year, which makes much of the cost of setting up the experience a one-time cost.

Prof. Lybbert will create a full write-up of the setup of the escape room, with details on each puzzle, as well as a full list of supplies, and other supplemental information. She will publish it as an open educational resource with a Creative Commons license for others to use, adapt, and share. To find the OER link and/or ask questions, please email Prof. Lybbert (lybbertb@uwgb.edu).

Donor Spotlight: Benjamin Cruz-Uribe

From student to teacher, Benjamin Cruz-Uribe has been actively involved with UW-Green Bay for 52 years.

Benjamin graduated from UW-Green bay in 1973. He earned his Bachelor of Arts with a Concentration in Ecosystem Analysis, an Option in Mathematics, a teaching minor in Spanish, and a Collateral in Secondary Education for Mathematics. From 1973-74, he attended UW-Madison and did graduate work in statistics but came back to UW-Green Bay where he graduate in 1979 with a Master's in Environmental Arts and Sciences in Environmental Mathematical and Statistical Modeling.

From 1981-1984, he was an Ad-Hoc Instructor of Statistics teaching summer sessions and served on the Alumni Board of Directors from 1988-1995.

He was employed at the A.C.Nielsen Company from 1974-2006, with his last position there being a Senior Statistical Resource Analyst. After retiring, he returned to UW-Green Bay as a Statistics tutor for the Athletic Department from 2006-2010. In 2010, he became an Adjunct Instructor of Statistics until his retirement in May 2017. He continues to teach in the Life Long Learning Institute where he has created 22 classes on the History of Early Christianity and a dozen other on a variety of subjects.

Ben and his wife, Barbara, have created two scholarships for UW-Green Bay: The Eugene Cruz-Uribe Memorial Scholarship in Historical Studies and the Barbara and Benjamin Cruz-Uribe Family Endowed Scholarship in Environmental Sciences. The former scholarship was created to honor the memory of his younger brother who had been a history professor for over 30 years prior to his death in a hit-and-run bicycle accident in 2018. The latter was created to award outstanding student achievements in the study of the environment, especially with issues related to climate change.

They have also created the Barbara and Benjamin Cruz-Uribe Family Endowed Award for the Study of Environmental Issues. This is an award that provides funds annually for tenured Natural and Applied Sciences faculty for the study, research, and/or teaching of environmental issues related to global climate change, air and water pollution, greenhouse gas studies, water issues and biological conservation. The faculty who have won this award are: Mandeep Bakshi ('21), John Luczaj ('20 & '19), and Patrick Forsythe ('18).

Ben says there are several reasons why he is choosing to give back to UW-Green Bay, a few of them being: "I was given over three years a merit scholarship that covered all my expenses. It was time for me to pay back an institution that gave me so much and fulfilled my long time ambition of being a member of an university faculty. I am hoping to aid in a small way the fight against the environmental problems that currently beset the world, especially climate change. This Award may be a small thing but small steps can lead to bigger steps." And finally, "This Faculty Award is the first of its kind. I truly hope that it will inspire more. The Faculty at universities like UWGB do not get the credit that they truly deserve. There are some truly outstanding professors here now and there were equally great ones here 50 years ago when I was a student in the 70's. This is my thank you."

He says "During my second semester at UW-Green Bay, my mother remarked to my girlfriend (now wife) that she was surprised that I actually liked going to school on a daily basis. It was the first time that she remembered me behaving in such a way. My mother's observation was totally and completely accurate. It was the first time in 14 years of attending an educational institution that I actually enjoyed going to school. K-12 plus first year of college were mostly a chore or a torture to be endured. UW-Green Bay was a joy in learning how to learn. And I will add my graduate studies at UW-Madison to the list. After what I had at UW-Green Bay as an undergraduate, my stay at UW-Madison was a primary motivator in why I returned to UW-Green Bay to finish my graduate work. I fully understand that UW-Green Bay is not made for everyone but it was made for me!!!"

Ben and his wife, Barbara, are pictured with the recipient of one of their Scholarships

UW-Green Bay Graduate Student Works at Sustaining the "Family Trees"

Patrick Brodhagen admits to being a hard worker. In fact, his to-do list would make young Abe Lincoln appear to be something of a slacker—attending graduate school, keeping up the family farm and launching a personal business. "As soon as the frost goes out of the ground, I'll be ramping up to 70 to 80 hours a week. When May comes around, it's up to 90 for a couple of months. It's a cycle."

What keeps him going? A very persistent alarm and (just-don't-call-it-work) ethic. "A lot of people make fun of me because I'm actually a late sleeper." Of course, "late" is defined within the parameters of Wisconsin's dairy culture. "If I have to, I'll wake up at 5:30 or 6. I'm usually wide awake by 7."

Then it's off to a typical 12-hour workday. "I'm not a morning person at all. I work a lot of hours, but I love every hour of it. I look forward to whatever it is I'm going to be doing, whether it's working with my personal business or crop consulting. Every day I'm having fun."

In the last two years, Brodhagen has added even more fun to his life—including completing graduate school course work in Environmental Science and Policy and launching his own business—Hickory Hill Forestry and Horticulture Services. "It's really a catch-all name so I could explore whatever I'm interested in." What tends to interest Brodhagen most is being outside and working with farmers. During the last two years, it may be a combination of fresh air and uniquely agrarian social distancing that has helped keep him going. "I work with a lot of farmers. They tell me—'Well, we're either covered in dirt or cow manure so we're not going to be that close to you anyway.'"

Hickory Hill Forestry is Brodhagen's winter seasonal work. During the summer, he's a crop consultant and plans on a career in agronomy. "I work with a lot of dairy farms with growing their crops, managing their manure, and helping them protect the environment, all while still being an efficient farm."

Brodhagen also readily admits there's another reason for his tremendous work ethic. "I want nice things and I've got to work hard for them. The main difference between a boy and a man is the sizes of the toys (equipment) we have."

Among those "nice things" is purchasing his own family's century-old 250-acre farm—a tradition that's been handed through generations. "My grandfather bought it from my great-grandfather, my dad bought it from his father, so it's my turn to buy it. I have to prove that I'm responsible enough and capable of taking it over."

The fact that in 2005, his parents started a garden center on the family farm in which Brodhagen helped out from the age of six until his senior year in high school might be evidence enough. But it turns out, there are even limits to his capacity for cheerfully accepting a fresh "fun"—especially when college beckoned. "My parents asked me if I wanted to take over the business and I told them I was burnt out doing retail sales, it was time for me to explore new things."

Not that he strayed far from the farm, choosing to attend UW-Green Bay as a commuting student for both his bachelor's Environmental Science and Geoscience degrees, plus completing the graduate degree program in environmental science and policy researching groundwater contamination in southern Door County.

Brodhagen's research objectives are to gain a greater understanding of where applications of manure or fertilizer should be managed to prevent water contamination and protect rural residents. His professional goal is to become an agronomist and consultant but he will never walk away from carrying on the family's sustainable traditions.

"The name my grandfather gave the homestead in the late 1950s was Valley Tree Farm. When he retired from dairy farming, he converted three-quarters of the property into a tree plantation. Those trees are 30 to 40 years old, so now I'm taking care of it and doing the forestry work—trying to turn it back to its natural setting."

Despite his formidable schedule, Brodhagen does confess to enjoying a hobby that helps him unwind after a long day. "When I get home, I usually split firewood until after dark. Sometimes until 10 p.m. Maybe it's a country-boy mentality, but there's nothing quite like chopping wood while watching the sunset and feeling the cool evening air roll in… it takes you back to a time when life was slower, simpler, and honest."

Grandpa and Honest Abe would be proud.

Green Bay West Serious About STEM (SAS) students recognized for 14 weeks of Tiny Earth research at UW-Green Bay

Six of West High School's Serious About STEM (SAS) students participated in a two-week camp in August of 2021 at UW-Green Bay to learn lab skills to search for novel antibiotics produced by soil bacteria. Three of those students then completed 14 weeks of research at UW-Green Bay during the fall semester.

This is typically a junior/senior level college course for science majors, and these students completed the research as juniors in high school. To honor their part in this international effort to combat antibiotic resistance, a celebration was held at West High on April 6, 2022. The students celebrated included: Jamayah Booth, Lanae Steele, Kiearra Hawkins, Jasmin Martinez-Hernandez, Yasmine Cruz and Maritza Lopez.

As part of the celebratory event, the students received their white lab coats and a certificate. Speakers were UW-Green Bay Chancellor Michael Alexander and Brian Merkel, Associate Professor and Tiny Earth Instructor at UW-Green Bay. Their Serious about STEM teacher/advisor at West is UW-Green Bay alumna Lisa Merkel '00 and '10 (recognized as an "outstanding alumna" by UW-Green Bay in 2020). Another alumna, Bonnie (Wallberg) Gonzales is a math teacher at West, and critical to the success of the program, including the co-teaching of the summer camps and fall research phases of the program.

The 14 weeks of research completed by Jasmin, Yasmine, and Martiza included conducting experiments, including DNA sequence analysis to identify the soil isolates, and to evaluate the activity of antibiotics their isolates produce against bacteria of clinical concern. The three students presented their research at the international Tiny Earth Symposium, December 2021.

This research is part of a worldwide initiative called Tiny Earth.

Text and photo from Green Bay Area Public Schools.

Engineering his Options; Ben Propson finds Sheboygan Campus and Bachelor's Degree as Keys to Advancement

Even before Ben Propson became a mechanical engineering major (and a Phoenix) he was a problem-solver at heart. And to extend that Phoenix metaphor just a bit further, while he didn't personally rise from any ashes, there have been some sparks along his career path.

"I worked in construction for years, then went into manufacturing. I walked into the door as a welder." The "door" in this case, was at the Case New Holland Agriculture facility in St. Nazianz, Wisconsin. And as part of a global network of companies employing more than 64,000 people in 66 manufacturing plants and 54 research and development centers in 180 countries, that door also opened a lot of opportunities.

So welding, while a laudable career choice, was more a launching point for Propson. When he ran into challenges at his job, he also saw opportunities. When quality issues began to crop up, he got involved. "Working with quality, manufacturing and design engineers, then seeing the interactions, plus the abilities to resolve issues quickly, was just awesome to be a part of." That experience led him to focus more on engineering and now he's progressed to the job title of manufacturing engineering. His secret to success "I was just tracking down problems as I went."

Story continues on next page

But a “can-do” attitude only goes so far with a multi-national corporation. Propson knew the real key for advancement was first through continuing education and then higher education. In fact, by the time he enrolled in the Mechanical Engineering program at the UW-Green Bay, Sheboygan Campus, he already had two associates degrees from a local technical college under his belt.

While no stranger to going to school and work at the same time, entering a bachelor’s degree program presented a significant logistical challenge. Luckily his company worked with him to balance his current position as a manufacturing engineer with his pursuit of a mechanical engineering degree. And so was the University with his scheduling. “It was nice to have Sheboygan as an option, because it’s closer than the Green Bay campus and I can even take some courses at Manitowoc, too.”

While long past “first-year student” status, Propson was surprised to find other non-traditional students of a similar feather within the flock. “I was kind of shocked I wasn’t the only adult student.” But that didn’t mean he was exempt from the challenges most fresh-from-high-school engineering majors face when enrolling in a liberal-arts university—completing general education courses. “I think I finally got most of my gen eds taken care of.” But that might have been the only part of his plan that was made up as he went along. “I’ve jumped all over the place just trying to get classes that will fit my schedule. So, I’m going into my senior year, but I still have sophomore classes to take.”

His advice for anyone (not just engineering majors) enrolling in college? Find an advisor and listen to that advice! “I really got into the practice of working with an advisor on a regular quarterly basis, probably five or six times a year. Just to make sure I stay on course.” And with graduation just around the corner, his final undergraduate decision may be choosing the perfect frame for his diploma.

Faculty Spotlight: Dr. James Kabhrel

James Kabrhel is an Associate Professor in Chemistry at the UW-Green Bay, Sheboygan Campus. He has a Bachelors of Science from Juniata College and a PhD in Organic Chemistry from the University of Minnesota—Twin Cities.

He started his teaching career at the University of Puget Sound (there for one year) before beginning at UW-Sheboygan in the fall of 2007. He became employed by UW-Green Bay in 2018 when UW-Sheboygan merged with UW -Green Bay.

James has multiple areas of interests such as incorporating different technology, OER, and media into his pedagogy. This includes audio and video projects for all of his courses. He also has some bench chemistry research projects, including developing labs that debunk pseudoscience, and developing green labs for organic chemistry. He is specifically analyzing consumer alkaline waters and how they interact with the body, and analyzing some products that contain essential oils, to see if they truly do contain the chemical components from those oils.

He says “I have always had an interest in how chemistry intersects with current events. The introduction of social media and how it proliferates misinformation has driven me to first teach about pseudoscience, and now develop practical labs that focus on debunking consumer products sold using pseudoscience.”

His favorite part about working at UW-Green Bay is the students, first and foremost. “Our mission of access provides such a diverse group of students, making classes always interesting from one day to the next. I also love my colleagues very much. In only just a few years in our four-campus model, I have been able to find some colleagues who share many of my interests, and that has led to avenues of shared research.”

James has gotten involved with several local environmental groups: member of the Maywood Park (Sheboygan) Advisory Board and a member of the Ice Age Trail Alliance. He also loves nature photography and posts pictures of birds and dragonflies on his Twitter regularly. You can follow him @KabrhelJames

National Estuarine Research Reserve

UW-Green Bay Hosts Technical Webinar to Discuss Progress on Designation Efforts of the Bay of Green Bay National Estuarine Research Reserve (NERR)

The University of Wisconsin-Green Bay is hosted a technical webinar to discuss progress on designation efforts of the Bay of Green Bay National Estuarine Research Reserve (NERR), and to share details on the site selection criteria and the candidate sites for the natural areas of the NERR.

The webinar was free and open to both media and the public. The webinar was of interest to local government officials, residents in areas near candidate sites that may have questions about what designation means, organizations focused on coastal and water issues, and friends of UW-Green Bay.

Further information about the candidate sites can be found **here**, including a map of the areas. Candidate sites range from the tip of Door County to Point Au Sable and Wequiock Creek in Brown County and includes potential sites in Suamico, Oconto and Marinette. Only publicly owned or lands open to the public are eligible to be included in the NERR and no new land will be purchased for the designation.

At a date following the technical webinars, the UW-Green Bay and the National Oceanic and Atmospheric Administration (NOAA) will host a virtual question-and-answer session to provide an opportunity for more in-depth discussion. A formal date and time for the question-and-answer session will be announced at the webinar, shared via email, and posted on the Green Bay NERR website. A recording of the webinars, and a summary of questions and answers asked during the webinars and at the follow-up session will be posted to the **Green Bay NERR website**.

Contact Emily Tyner (**tynere@uwgb.edu**) with any questions.

What is a National Estuarine Research Reserve?

The National Estuarine Research Reserve System (NERR) is a national network of 30 sites across the coastal US, including the Great Lakes, designed to protect and study estuaries and their coastal wetlands. The mission of the NERR System is, “To practice and promote stewardship of coasts and estuaries through innovative research, education, and training using a place-based system of protected areas.” Established through the Coastal Zone Management Act, the reserves represent a partnership program between NOAA and the coastal states. NOAA provides funding and national guidance, and each site is managed on a daily basis by a lead state agency or university with input from local partners. For the Bay of Green Bay NERR, UW-Green Bay is leading the designation process. At the local level, a Green Bay NERR will offer a coordinating force to manage, restore, and protect the Green Bay ecosystem, with a programmatic focus on four sectors: research, education, stewardship, and training.

Environmental Management and Business Institute

Environmental Management and Business Institute
at the University of Wisconsin - Green Bay

Alumnus Luc De Baere Named UW-Green Bay's 'Earth Caretaker' for 2022

The University of Wisconsin-Green Bay Environmental Management and Business Institute (EMBI) awarded the twelfth annual Earth Caretaker Award to UW-Green Bay alumnus Luc De Baere (Class of '78 &'80).

Luc De Baere is a Belgian native. He obtained a Bachelor's in Chemistry (1978) and a Master's Degree at UWGB in Environmental Arts and Sciences with a focus on Waste Management (1980). Luc's graduate work on anaerobic digestion at UWGB landed him, upon his return to his native country, a job with a large Belgian company, owned in the 70's by Westinghouse of Pittsburg, PA. He was hired to develop a process to produce biogas from municipal solid waste. He became the inventor of the Dranco technology for the anaerobic digestion of organics derived from household solid waste, with several patents in over 35 countries. This technology operates under 'dry' conditions in a similar way as the generation of gas in a landfill, but the Dranco technology controls and optimizes the anaerobic degradation so that the production is complete within 25 days instead of 100 years in a landfill. In 1988, he formed the company Organic Waste Systems (OWS) together with investors in the Antwerp area of Belgium, and became its managing director. The company has constructed and sold more than 35 waste treatment plants in 16 countries, mostly in Europe but also including facilities in South Korea, Japan and China. OWS is currently pursuing several projects for cities in California, Minnesota and other states that are looking to build infrastructure to treat household waste. The OWS technology, combined with some upfront recycling, can achieve 90% landfill diversion, by producing biogas, a very clean compost, clean inerts (glass/ stones/ceramics) and a paper/textile fraction as a combustible material. The compost can be used in agriculture and has been shown to increase yields of corn and other crops. Projects range from $10 to 50 million of investment for the Dranco part. During the early nineties, he was approached by the Delaware based company DuPont in order to develop a testing procedure for determining the biodegradability of plastics in landfills. He then drafted three of the most used biodegradability testing methods currently used for determining the biodegradability of biopolymers and compostable materials. These were approved by the American Society of Testing of Materials (ASTM), and later on a worldwide basis by the European and International Standards Organization (CEN and ISO). This resulted in the launch of a second activity within OWS as a commercial lab to provide the testing of biodegradable and compostable materials. OWS is by far the largest and most experienced lab in the field on a worldwide basis, and has many US clients such as P&G, 3M, Cargill, Scott Paper and many other multinationals looking for plastic waste solutions. When Luc officially retired in 2021, the company OWS employed 130 people with annual sales amounting to US$25-30 million. OWS has subsidiaries in Germany, Japan and in the USA, which are active in the field of solid waste digestion and biodegradability testing. Luc continues to be president of OWS Inc and of Dranco Inc, which are the US based subsidiaries of OWS in Dayton, Ohio. The award ceremony and reception was held on April 19, 2022.

2021-2022 College of Science, Engineering and Technology Scholarship Award Recipients

Congratulations to the following students on receiving the College of Science, Engineering and Technology 2021-2022 Scholarship Awards!

2021-22 Natural and Applied Sciences Scholarship Awardees

James E. Casperson/Environmental Science Alumni Endowed Scholarship (one $1,670 award): **Kyle Chaudoir**

Alfred O. and Phyllis E. Holz Endowed Scholarship (two $1,450 awards): **Kyle Chaudoir** and **Whitney Tank**

Carol R. DeGroot Endowed Scholarship in Environmental Science (one $1,680 award): **Carly Nyhus**

Morgan/Macaluso Family Endowed Scholarship (one $1,020 award): **Tiffany Paalman**

Ganga and Elizabeth Nair Endowed Scholarship (one $1,720 award): **Caitlyn Pingel**

Katie Hemauer Memorial Endowed Scholarship (one $1,220 award): **Tamara Kancoglu**

Bradford Cook Memorial Endowed Scholarship (one $460 award): **Brooke Schuler**

Barbara and Benjamin Cruz-Uribe Family Endowed Scholarship for the Study of Environmental Issues (one $700 award): **Steffi Farrey**

Chad Moritz and Beth Meyer and Annual Scholarship (one $1,000 award): **Grant Meeks**

Ruth and James Wiersma Endowed Scholarship (one $1,000 award): **Cecelia Austin**

Herbert Fisk Johnson Endowed Scholarship for Excellence (three $1,240 awards): **Haillee Fritsch, Tamara Kancoglu,** and **Whitney Wasmuth**

Brown County Waste Transformation Team Annual Scholarship (one $1,175 award): **Richard Perschon**

Science and Mathematics Endowed Scholarship (one $660 award): **Alexis Paye**

Nancy J. Sell Memorial Endowed Scholarship (two $965 awards): **Nasteho Abdi** and **DiemTuyen Phan**

Gary L. Miller and Georgia Nix Miller Endowed Scholarship in Biology (one $670 award): **Haley Herwald**

2020-21 Resch School of Engineering Scholarship Awardees

NEW Engineering Endowed Scholarship-First Year (one $1,900 award): **James Vander Wyst**

NEW Engineering Endowed Scholarship-Second Year (one $2,075 award): **Cade Koschnik**

Susan Finco and Ed Kralovec Endowed Scholarship (one $1,140 award): **Abigail Dewane**

Superior Diesel Endowed Scholarship for Engineering Technology (one $1,100 award): **Jacob Genske**

Dykema Family Endowed Scholarship (one $2,535 award): **Duvan Ramirez**

Lee and Kathy Anderson Endowed Scholarship for Engineering Technology (one $2,285 award): **Andrew LaCount**

Beth and Richard Gochnauer Endowed Scholarship for Engineering Technology (two $2,600 awards): **Emma Loucks** and **Richard Perschon**

Northeast Wisconsin Manufacturing Alliance Future All-Stars Annual Scholarship (Engineering Technology) (two $2,500 awards): **Jesus Guzman** and **Danielle LaLonde**

Northeast Wisconsin Manufacturing Alliance Future All-Stars Annual Scholarship (Engineering) (two $2,500 awards): **Michael Bocinsky** and **Michael McGuire**

BPM, Inc., A Specialty Paper Mill, Annual Scholarship for Engineering Technology (one $1,000 award): **Andrew LaCount**

FEECO International Engineering Technology Annual Scholarship (one $1,000 award): **Gracien Onya**

RSE Award Recipients Continued

HATCO Corporation's David G. Hatch Annual Scholarship in Engineering (two $2,500 awards): **Ryan Buergi** and **Noah Hanmann**

Optima Machinery Corporation Annual Scholarship in Engineering (one $1,500 award): **Allyssa Rueth**

Georgia-Pacific Annual Scholarship in Engineering (five $1,000 awards): **Elizabeth Heinen, Daniel Huhtala, Cade Koschnik, Ava Lanczy,** and **Ellyssa Purdy**

Foth Companies Endowed Scholarship in Engineering (two $1,000 awards): **Bailey DeYoung** and **Elizabeth Heinen**

The Ken Metzler Engineering Scholarship (two $5,000 awards): **Denny Christoff** and **Colton Koss**

Jack and Engrid Meng Mechanical Engineering Scholarship (one $1,860 award): **Angelique Wink**

2021-2022 Human Biology Scholarship Awardees

The Jeremy Green Family Scholarship (one $415 award): **Kylie Gierach**

Dr. Donel Sullivan Scholarship in Health Sciences and Health Professions (one $2,500 award): **Jenna Grandinetti**

Herbert and Crystal Sandmire Scholarship (one $2,500 award): **Jennifer Vandertie**

Herbert and Crystal Sandmire Scholarship (one $2,085 award): **Kylie Gierach**

Herbert and Crystal Sandmire Scholarship (two $1,500 awards): **Elissa Gilbertson** and **Katharina Keller**

Herbert and Crystal Sandmire Scholarship (four $1,000 awards): **Arionna Loughlin, Jessica Matteson, Emma Schultz,** and **Vanessa Vincent**

Herbert and Crystal Sandmire Scholarship (three $750 awards): **Aric Jump, Grant Meeks,** and **Kayley Nelson**

Herbert and Crystal Sandmire Scholarship (three $500 awards): **Talia Boyea, Sandy Salgado,** and **Kaitlyn Sehloff**

UW-Green Bay, Marinette Campus' New Engineering Certificate Aims to Supply Shipbuilding

The University of Wisconsin-Green Bay's Marinette campus is set to become a training ground for the shipbuilding industry, just as the U.S. military is gearing up for new capabilities.

UW-System President Tommy Thompson traveled to Marinette Thursday and invited Fincantieri Marinette Marine Chief Executive Mark Vandroff to join him in announcing a new two-year certificate program in electrical engineering technology that will be offered at the Marinette campus. The program aims to produce white-collar workers for Fincantieri Marinette Marine and other ship builders.

"We want to be able to help young men and women get engineering courses for two years and hopefully go to work in the shipbuilding industry," said Thompson, a former Wisconsin governor who said he is retiring from the UW-System position this year.

The new engineering technology program is designed to produce the trained workers Fincantieri Marinette Marine needs to deliver on a new government contract for 10 7,000-ton Constellation ships for the U.S. Navy.

"You only need to look at the headlines and current events today see how important it is that the U.S. maintains superior military capability. We are honored to be part of that at Fincantieri Marinette Marine," Vandroff said.

"Every business ultimately is a people business. You need people who are educated to get things done," Vandroff said. The company will need hundreds of trade workers and business professionals to deliver the Constellation ships. "That ship is twice as big as anything we've built before," Vandroff said.

CSET Faculty and Students Busy With Spring Field Trips

Seeing K-12 students on campus was a welcomed sight after a two-year hiatus due to Covid. CSET's faculty and students have been busy hosting a variety of field trips that include: Richter Museum tours, Cozmo robot demos, cadaver lab tours, sheep's eye dissections, physics and chemistry lab demos, and hands-on activities focused on freshwater. Contact Camps and Outreach Coordinator, Samantha Betancur (betancus@uwgb.edu) to book a field trip!

UW-Green Bay Receives $275,492 to Train Next Generation of Water Scientists

The University of Wisconsin-Green Bay will receive $275,402 in support from the Freshwater Collaborative of Wisconsin this year to enhance its water-related academic programs. The funding is part of a statewide initiative, backed by the Wisconsin State Legislature and the Governor's office, to tackle 10 grand water challenges and support curriculum development, undergraduate research opportunities, career development, and field-training experiences for students interested in studying water-related fields at the 13 UW Schools.

About the Freshwater Collaborative

The Freshwater Collaborative of Wisconsin is a partnership of Wisconsin's 13 public universities, connecting with industry partners, local communities, policymakers and advocacy groups. Its mission is to establish Wisconsin as a world leader in freshwater science, technology, entrepreneurship and economic growth. The Freshwater Collaborative of Wisconsin is training the next generation of scientists to solve global water resource problems through academic programs, collaborative research and career development across the UW System.

Bridge Dedication Event in the Cofrin Memorial Arboretum

On Saturday, April 23, 2022, the University community and friends came together to celebrate the dedication of new bridges for the Cofrin Memorial Arboretum. With the assistance of private donations, the University has invested more than $400,000 in upgrades to the Arboretum which surrounds the Green Bay Campus. The event was followed by an opportunity for volunteers to participate in an arboretum clean up.

Faculty Spotlight: Dr. William Dirienzo

William (Bill) Dirienzo is an Associate Professor and Chair of Physics at the UW-Green Bay, Sheboygan Campus. He has a Bachelors of Science degree with Comprehensive Honors in Physics, Astronomy-Physics, and Mathematics from UW-Madison. He also received a PhD in Astronomy from the University of Virginia where he was the recipient of the Edward P. Owens Fellowship from the Jefferson Scholars Foundation and the Graduate Fellowship from the Virginia Space Grant Consortium. He was hired by (at that time) UW-Sheboygan in 2014.

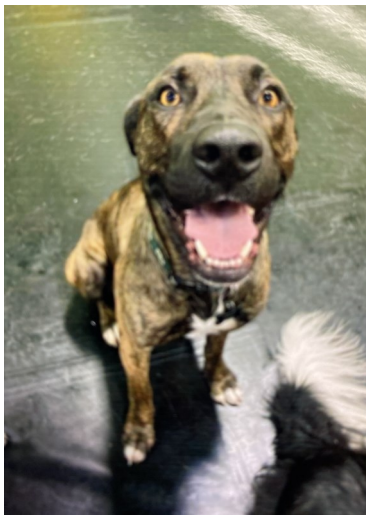
His research specialty is observational radio astronomy in galactic star formation. His work combines data from ground-based radio observatories with space-based infrared telescopes to study the formation processes of massive stars in the Milky Way, particularly in infrared dark clouds and infrared bubbles. He also has a strong interest in the scholarship of teaching and learning, especially as it applies to introductory level science courses and online learning.

Bill is currently working on developing lessons for Pride Summer Camp and planning to resurrect UW-Green Bay's participation in the RockSat program for Fall 2023. He is always looking for newcomers for the rocket team he advises, the RockSat program, outreach projects, developing the Sheboygan Maker Space, learning to code, or doing an astronomy research project.

Bill says he got into astronomy at 3 years old after visiting Cape Canaveral and wanting to become and astronaut. "My parents bought me books about space and I became more interested in the science of astronomy than in space travel. When I got to high school and college I tutored peers and learned how much I also like teaching science."

His favorite part about working at UW-Green Bay is "getting to work with people in such a diversity of roles, all towards the common goals of making the world better through education and research."

Pictured below, is Bill's dog, Pumpkin, a 2.5 year old male who he adopted from the Human Society of Sheboygan in December 2021.



Bill encourages people to look to adopt first, donate or volunteer at their local humane society (he walks dogs), and also give blood (he donates his platelets regularly).

His time away from work is spent focusing on his dog, volunteer opportunities, participating in outreach activities, and thinking about astronomy.

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-2803
2420 Nicolet Drive - ES 317
Green Bay, WI 54311

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

UW-Green Bay College of Science, Engineering and Technology