UNIVERSITY OF WISCONSIN-LA CROSSE COLLEGE OF SCIENCE AND HEALTH NEWSLETTER



CREATING COMMUNITY



in this issue

12 New program: FinTech

The Department of Computer Science & Computer Engineering, in collaboration with UW Parkside and UW-Extension, has launched two new graduate certificate programs in financial technology (FinTech) to meet the growing demand for technical expertise in the financial services industry.

22 Superb scientist, motivational mentor

For Tisha King-Heiden, a career in biology proved to be a pretty solid backup plan. After realizing her childhood dreams of becoming a ballerina were unlikely to materialize, she quickly became infatuated with sharks and the idea of working as a marine biologist. A few decades later, she can say she made the right decision.

26 Making waves

A research vessel that will transform aquatic science education in Wisconsin is getting closer to hitting the water. Faculty from the River Studies Center visited Seattle recently to meet with officials from Munson Boats, the company manufacturing the Research Vessel Prairie Springs.

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Science & Health News

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ON THE COVER: Graduate student in biology Danielle Hudson conducted research on ground nesting bees in early spring near Wittich Hall and Murphy Library. Hudson says since they emerge early in the growing season, they are essential to early-blooming plants. She's sharing findings to create community awareness about the importance of the pollinators.

CREATING A STRONGER COMMUNITY



CREATING A STRONGER COMMUNITY

The College of Science and Health continues to develop and nourish partnerships with residents and health-related organizations throughout the state. Whether it's bringing area older adults to campus or sending graduates throughout the state to build on their undergraduate research, CSH faculty, staff and students are building community.

'Walk with an Eagle' benefits students, area adults

ecreational therapy students are gaining soft skills and practical abilities critical to successful careers in health care – one step at a time.

Assistant Professor Jennifer Taylor has partnered with AARP Wisconsin and UWL Community Engagement to launch the Walk with an Eagle program, the first of its kind in the state.

The program, in its first semester this past spring, matches recreational therapy students with older adults, with the goal of sparking social connections through the simple act of walking and talking.

"These students are training to become recreational therapy professionals, so it's important that they're able to build a rapport with the community, conduct assessments, and implement and evaluate programs," Taylor explains. "The focus is less on seeing how much physical activity you can do and more on the social aspect, building that rapport."

Once a week, the students and their partners embark on a 45-minute walk around campus.

Students track their partner's steps, assess how long and how far they walk each session, and make adjustments to the route.



Jennifer Taylor, assistant professor of recreation management and therapeutic recreation, coordinated the Walk With and Eagle program with UWL's Community Engaged Learning program.

But Taylor has been careful to ensure that none of these more clinical tasks detracts from the greater purpose of creating social connections. Students who can build meaningful relationships with clients, particularly older adults, will have a leg up when they enter the field, she says.

"I've heard from some of our walkers that this is the only time each week that they really interact with college students," Taylor says. "We want to make that time as special as possible. So it's amazing to see those interactions with students, all the stories they share with each other."

Carter Baures, a junior majoring in recreational therapy, is no stranger to working with older adults. He began working at an assisted living facility in high school and quickly discovered it was his calling.

"Nothing I've found has made me feel as passionate as I feel about long-term care and working with older adults," says Baures, noting how much he has enjoyed the Walk with an Eagle program. As participation in the program has increased, he's taken on two additional walking partners. "I've really enjoyed the hands-on-learning, the clinical experience and working on my communication skills," he says. "You talk with someone, and you see them smile, and it stays in your mind forever."

Paige Coleman, a senior recreational therapy major, has had a similarly enriching experience.

"I previously thought I wanted to work with children with special needs, but this class has made me want to work with older adults, too," she says. "My partner and I talk about things going on in our lives, things going on in the community, what we did over the weekend. It's really nice to make that personal connection while helping them reach their goals and live a healthier life."

While Taylor jokes that winter in Wisconsin may not sound like the best time and place

to start a walking program, attendance was strong. The number of participants from AARP grew from 10 to as many as 24, with many rarely missing a session.

And although there's no escaping Mother Nature entirely, the class was able to mitigate its effects by utilizing campus buildings in their walking routes – which has an added benefit.

"It's nice to see all of the new buildings around campus," says walker Bev, who earned a business degree from UWL in the mid-1990s. "It's fun walking and fun to learn about the students — where they come from, what they're interested in and what they plan to do."

Liz, another walker, adds: "The fact that it's on campus and allows us to connect with students was (a draw for me). And it's exciting to be part of a pilot program." Darrin Wasniewski, associate state director of community outreach for AARP Wisconsin, says programs that support intergenerational connections are sorely needed.

"Society has a way of segregating people based on age," he says. "For us, this is the first program in the state like this, and it's been great to see it come to fruition."

Wasniewski and Taylor have discussed bringing the program back in the future.

"I think we all realize it's too important of a program to let it go away," he says.



CREATING A STRONGER COMMUNITY

New center creates comunity





Pioneers in UWL's new Health Science Interprofessional Research Center. The center aims to advance health equity through interprofessional applied research, providing community members with evidence-based health promotion programs led by UWL health-related professional students and supported by UWL faculty.

6 SCIENCE & HEALTH NEWS SUMMER 2023

he new UWL Health Science Interprofessional Research Center (HSIRC) is creating community.

Opportunities for various healthrelated programs students to engage in interprofessional experiences is viewed as a vital component in preparation for their future careers in healthcare. While students may gain some of these skills in their individual programs, the new HSIRC provides students an interprofessional lens for both durable skills (e.g., leadership, communication, teamwork) along with research skills (e.g. collecting and analyzing data, research presentations, and publications).

The mission of HSIRC is to support and further develop interprofessional applied research among UWL students, faculty and community partners, in tandem with national and international scientists. The center provides a space to link faculty and students from multiple UWL health-related professional programs. (Adapted Physical Education, Occupational Therapy, Physical Therapy and Therapeutic Recreation.)

"Our team of faculty, community partners, researchers, and students focus on community-based health interventions aiming to positively affect clinical health outcomes in diverse populations," says Jenn Taylor, who serves as the center's director.

A steering committee was established in spring 2022 to develop a formal entity on campus. The center is currently housed in CSH in the Recreation Management and Therapeutic Recreation Department. Taylor began the university entity establishment process, recruiting faculty leads from four UWL programs, as well as community stakeholders. The committee was awarded a UWL Margins of Excellence Grant and hired five undergraduate research assistants in fall 2023.

The vision of the steering committee included:

- Establishing a centralized location for health science faculty to conduct interprofessional research activities.
- Providing interprofessional mentoring opportunities for students including research study design, data collection and analysis, grant writing, professional presentations, and manuscript development.
- Implementing and validating evidencebased health promotion programs for community members from diverse populations.

Faculty from four UWL programs will support interprofessional research along with national and international scientists. The center includes affiliate faculty from R1 and R2 universities, as well an international faculty member in Japan. Adapted Physical Education, Occupational Therapy, Physical Therapy and Therapeutic Recreation.)

The center looks forward to additional affiliations. There are currently 159 similar interprofessional centers across the country, according to the National Center for Interprofessional Practice and Education, 2022. These types of interprofessional collaborations will provide high-impact practices for UWL faculty and students, while at the same time benefitting community partners.

The center also plans to increase the number of faculty incorporating interprofessional experiential learning into their curriculum. Faculty leads in the center include: W. Thomas Means, Recreational Therapy; Hanni Cowley, Physical Therapy; Laura Schaffer, Occupational Therapy; and Brock McMullen, Exercise & Sport Science.

The Health Science Interprofessional Research Center aims to advance health equity through interprofessional applied research, providing community members with evidence-based health promotion programs led by UWL allied health professional students and supported by UWL faculty. Research from communitybased studies will provide community partners with data that may aid them in grant writing and demonstrating health outcomes for the clients they serve.

As an experiential research center, the center creates intentional "communities of practice" committed to collective, reflective, and systematic methods, engaging faculty, students, and community stakeholders as equal partners throughout the research process.

References: National Center for Interprofessional Practice and Education. Retrieved April 15, 2022.



Article by Assistant Professor Jennifer Taylor, Recreation Management and Therapeutic Recreation

Doctoral student shares his UWL experiences that created a competitive edge for grad school, award-winning research at the Medical College of Wisconsin

age Stuttgen discovered his passion for research in a campus science lab. Today, he's an awardwinning doctoral student researcher at the Medical College of Wisconsin with plans to become a biochemical research scientist or professor in the Midwest.

"I loved being in the lab and trying to answer difficult scientific questions," says the May 2019 graduate.

By the end of his time at UWL, Stuttgen had spent 3½ years in Todd Weaver's biochemistry lab. Outside of lab, he presented research at multiple conferences including two national conferences; participated in grant writing; wrote a manuscript, and instructed other students as a research mentor, math tutor and biology teaching assistant.

"These experiences assured me that a career in basic science research is what I wanted to pursue and helped make me a competitive graduate student applicant," he says.

Today, Stuttgen is keeping his research stride as a fourth-year graduate student researching Atherosclerosis and Cardiovascular Disease. This year he has received numerous awards and honors, including being selected one of three winners of the school's inaugural Friends of MCW Excellence in Research Award given to students who have passed the doctoral qualifying examination and have exhibited exemplary scholastic and research excellence as assessed by the awards subcommittee of the Graduate Studies Council.

While at UWL Stuttgen said faculty mentors were training him and other biochemistry students to be professionals in their field, learning both the technical and the soft skills needed in science.

"The Biochemistry program at La Crosse does a phenomenal job preparing students for graduate school. When I entered graduate school, my basic science knowledge was strong from the intense curriculum," says Stuttgen.

"Additionally, the advanced biochemistry lab is a hypothesis-driven research



Gage Stuttgen, Trempealeau, earned his undergraduate degree at UWL in May 2019. His research experience with Professor Todd Weaver instilled a passion for biochemistry that led to his pursuit of a doctoral degree in biochemistry at the Medical College of Wisconsin.

experience that helped me develop my soft skills like how to write, speak, work as a team, analyze data, and think critically."

Stuttgen's message to students interested in pursuing graduate school is to take advantage of the unique opportunities offered at UWL like conducting undergraduate research. At UWL, Stuttgen was supported by grants and scholarships totaling \$33,850 over his four years. These awards such as Undergraduate Research Creativity Grants and the Hardy W. Chan and Sons Summer Undergraduate Fellowship made his research experience possible.

"One of the unique things about La Crosse is how much they invest in undergraduate

research by giving out grants and fellowships and sending students to conferences," he says. "Without these things, I might not have been able to conduct undergraduate research and would not have had the experience to make me a competitive graduate school applicant. La Crosse is a special place, and I am so grateful and proud to be an Eagle."

Professors Todd Weaver and Dan Grilley watched Stuttgen present his research as a second-year graduate student at the ASBMB conference in Philadelphia this past spring. Weaver said his presentation skills have developed since they all traveled to the ASBMB international meeting when Stuttgen was an undergraduate years ago. "We tell our research students to develop a good story from their data and take the audience on a journey," says Weaver. "I can honestly say it was one of the most welldesigned and delivered presentations I have witnessed from a second-year graduate student. He has mastered the art of storytelling in science!"

CREATING A STRONGER COMMUNITY



A bee community

Biology graduate student Danielle Hudson conducted research on ground nesting bees in early spring outside on university campus. The bees nest mainly in front of Wittich Hall and south of Murphy Library and are typically out until the end of May.

Hudson encourages those who've stumbled over a bees nest to resist trying to get rid of them. "Ground nesting bees are important pollinators and also very docile," Hudson explains. "They are so mellow, you probably won't even notice them unless you are looking."



See more about her research.

Behind the curtain: Deconstructing cutting-edge science

t would be amazing for UWL students to meet Wisconsin scientists making medical breakthroughs to combat the world's deadliest diseases. They are.

Nearly 50 life science faculty from 15 Wisconsin Primarily Undergraduate Institutions (PUIs) along with 15 Medical College of Wisconsin (MCW) researchers gathered at the "Symposium on Research Deconstruction" Feb. 25 on the MCW campus. The goal of the symposium and the forward-looking program being organized was to build partnerships between PUIs and MCW to focus on the "Deconstruction" of cutting-edge research and incorporate it into science course pedagogy.

Spearheaded by Michaela Patterson, assistant professor in the Department of Cell Biology, Neurobiology and Anatomy at MCW, the effort is to create a network of scientists and educators to directly insert research conducted at MCW into college classrooms to inspire the next generation of scientists. PUI faculty have flexibility in how to implement the Research Deconstructed pedagogy.

Jaclyn Wisinski, assistant professor of Biology, implemented research deconstructed a bees nest to resist trying into her Cell Signaling course (BIO483/583), an upperlevel biology elective for undergraduates and master's students. To integrate concepts from bioinformatics, biochemistry, physiology and cell biology, the Cell Signaling class was paired with MCW neuropharmacologist John McCorvy, who investigates if "bad" drugs can be used for good. Through Zoom, McCorvy presented a professional-level research seminar, like what would be presented at disciplinespecific conferences, about modified LSD as a potential anti-depressant without the classic hallucinogenic effects.

Interesting, though quite complex, Wisinski helped students "deconstruct" the research



John Kirby

by explaining the neurobiology of depression and anxiety, the signaling pathways required for neural function, and how the experiments led scientific interpretation, during subsequent class meetings. Following the "deconstruction," McCorvy joined the Cell Signaling class via Zoom for a student-led question and answer session, with inquiry ranging from experimental design to career path to general mental health.

Although Cell Signaling students regularly discuss research articles, interacting directly with a scientist through research deconstructed pedagogy made students appreciate the time, effort, and consideration that goes into each experiment conducted. Students felt empowered and motivated by this experience.

Also, as an early adopter of the Research Deconstructed pedagogy, Dan Bretl, assistant professor of Microbiology, took it one step further by creating the Microbiology Symposium "Research Deconstructed" (MIC460), a one-credit, semester long, upper-level microbiology elective. The class consisted of five juniors and six seniors with microbiology or biochemistry majors interested in graduate school or careers in research. John McCorvy

As part of the class, students have discussed how to pursue applying for and having success in graduate school and research careers, as well as practical considerations such as what is a typical day like for a laboratory student or employee.

To deconstruct a high-level research presentation, Bretl was paired with John Kirby, professor and chair of the Microbiology and Immunology Department at MCW. Kirby presented his work, titled "Gut Bacteria Prevent Weight Gain by Burning Calories," to the class via zoom in February.

Kirby's research combines such diverse topics as the gut microbiome, mouse physiology and weight gain, and the development of new pharmaceuticals, challenging the class of mostly microbiologists to consider diverse research topics they were not previously exposed to.

In addition to the initial Zoom presentation, Bretl and his class were fortunate to host Kirby as he visited UWL March 23 for a live Q&A session. During his visit, Kirby had coffee and lunch with undergraduate and graduate students, met with Microbiology Department



Corvy

faculty, and got a tour the Prairie Springs Science Center.

Additionally, he provided a public seminar with the same title to approximately 40 students and faculty from the CSH Microbiology, Biology and Chemistry departments. As a relatively new professor and chair at MCW, Kirby had never visited UWL and was very impressed with the students, facilities, research and education here on campus.

Moving forward, Bretl and Wisinski are looking to expand the Research Deconstructed ideas into their courses and further solidify the partnership between MCW and the other PUIs across Wisconsin. Contact Bretl (dbretl@ uwlax.edu) and/or Wisinski (jwisinski@uwlax. edu) with any questions.



Article by Assistant Professor Jaclyn Wisinski, Biology



The Department of Computer Science and Computer Engineering has collaborated with UW Parkside and UW-Extension to launched two new graduate certificate programs in financial technology. The effort aims to meet the growing demand for technical expertise in the financial services industry. Undergraduate students benefit from the Kaplan Finance Lab.

NEW **PROGRAM** Grad certificate available for FinTech

he UWL Department of Computer Science & Computer Engineering, in collaboration with UW Parkside and UW-Extension, has launched two new graduate certificate programs in financial technology (FinTech) to meet the growing demand for technical expertise in the financial services industry. The programs, "FinTech Digital Transformation" and "Emerging Technologies in FinTech," are designed to equip students with the technical competencies required to advance their professional careers in the FinTech sector.

The "FinTech Digital Transformation" certificate program focuses on the digital transformation of financial services and covers topics such as mobile banking, contactless payment systems and cybersecurity. The "Emerging Technologies in FinTech" certificate program explores the latest trends in FinTech innovation, including cryptocurrency, distributed ledgers, digital wallets, and smart contracts.

According to labor market projections, the employment numbers for select occupations related to FinTech are expected to increase by 12% between 2021 and 2031 in Wisconsin, 11% in the upper Midwest and 14% nationally. By completing these certificate programs, students can position themselves to take advantage of these employment opportunities and contribute to the continued growth of the FinTech industry.

The target audiences for these certificates are returning adult learners who have a bachelor's degree and are working in either finance or IT who would like to advance their career, as well as professionals who desire to start a new career in financial technology. Individuals with a technical background will learn fundamentals of corporate finance that will enable them to enter the FinTech domain. Those with a background in finance will likewise learn sufficient technical fundamentals to enable them to also enter the FinTech industry.

The Department of Computer Science & Computer Engineering is excited about the opportunity that the programs afford. While Computer Science and Software Engineering are intrinsically rich areas of academic study, they become most useful when their work is applied to other disciplinary domains.

The FinTech certificate programs provide an exciting opportunity for faculty with expertise in a wide array of technical sub-disciplines, such as high-performance computing, information security, web application development, programming languages, software engineering and formal methods to apply this expertise to the financial sector.

The department recognizes that with the rapidly growing demand for FinTech professionals, these programs can help students stay ahead of the curve and take advantage of new and exciting career opportunities in this dynamic and growing field.

Article by Professor Kenny Hunt Department of Computer Science and Computer Engineering

INSPRATORIAL UWL professor recognized with state honor for research, mentoring

ays to store energy will remain at the forefront for scientists working to meet the challenges of climate change. Students at UW-La Crosse will continue to get opportunities to take part in that challenge thanks to an innovative faculty member receiving state recognition.

Assistant Professor Sujat Sen in the Department of Chemistry and Biochemistry. leads a research group for undergraduate students exploring novel materials for energyrelated applications such as batteries and electrolyzers. He will receive the Carl E. Gulbrandsen Innovator of the Year Award at the WiSys annual SPARK Symposium at UW Oshkosh in August. The award is bestowed upon UW System faculty or staff who make exemplary contributions as a WiSys innovator. WiSys is an independent, nonprofit organization helping to advance scientific research by patenting technologies developed at UW comprehensive campuses.

Sen, who has taught at UWL since 2018, is grateful for the recognition of his research, along with his teaching and mentoring.

"The discipline of electrochemistry – how electrons can be used to drive chemical reactions – has always fascinated me, and worldwide efforts to decarbonize the world are increasingly reliant on electrochemical technologies such as batteries, fuel cells, solar cells, electrolyzers and many more," Sen explains. "Such applied research that prepares us to deal with dynamic, societal and environmental challenges is essential. It is what motivates me to mentor students in this growing area of commercial and academic interest."

Sen says receiving the award is a sign of encouragement from WiSys and the state of Wisconsin, both willing to invest in efforts of the scientific community and development of the future workforce.

Sen says it can be challenging to balance research and teaching. He's grateful for support from colleagues in the Department of Chemistry and Biochemistry and the dean's office, along with the university for providing resources to facilitate research efforts throughout the year.

"The freedom to develop new course content has also been very helpful to incorporate elements of my research in an upper-level course that teaches the role of chemistry, physics and math in the development of practical devices such as lithium-ion batteries, hydrogen-oxygen fuel cells or silicon based solar cells," Sen says. "Electrochemistry is a highly interdisciplinary science requiring a confluence of knowledge from chemistry, physics, engineering and mathematics. I am grateful for the various collaborators and experts at UWL and beyond who have provided guidance and consultation over the years."

Sen's work with WiSys has involved different projects – from CO₂ catalysts to generate hydrocarbon fuels, to electroplating of zinc on steel for corrosion protection applications. Two patent applications have emerged from the work and are in their nascent stages. Further work with industrial partners is needed for assessing commercial viability. The corrosion protection research is a collaborative effort with Professor Seth King in the UWL Department of Physics.

With the annual WiSys SPARK Symposium, Sen has presented and mentored students with their presentations. He's also been an advocate of the WiSys Student Ambassador Program and encouraged multiple students to be a WiSys Ambassador on the UWL campus. Most recently, his student Marty Bond serves as a WiSys ambassador and also on the SPARK Steering Committee.

This summer, Sen's research continues with a WiSys grant studying nanofluids for energy storage and conversion applications, as well as a collaboration with Purdue University Researcher Sunghwan Lee in a multi-year National Science Foundation funded project. To focus on fundamental science, Sen and two undergraduate students will be hosted by Professor Sunghwan Lee's research group at Purdue for two weeks to learn state-of-the-art experimental techniques in materials science.

Right: Assistant Professor Sujat Sen, Chemistry and Biochemistry, will receive the Carl E. Gulbrandsen Innovator of the Year Award at the WiSys annual SPARK Symposium at UW Oshkosh in August.



RESEARCH RELATONSHIP Mayo, UWL collaboration furthers health research

ince its launch in 2019, a collaboration between Mayo Clinic Health System and UWL has advanced health research in and beyond the Coulee Region.

Through the relationship, Mayo Clinic Health System providers, university faculty and students work together on research that will improve health and medical care, while providing valuable experience for learners who will become the next generation of scientists, innovators and health care providers.

To date, the collaboration has established:

 The Collaborative Seed Grant Program Funding. The program has funded six health-focused research projects. Led by teams of physicians and scientists from both institutions, seed grants often launch promising new research projects and provide valuable preliminary data to attract more substantial funding from external sources. These projects advance research in strategic health areas, including sports medicine and cancer. To date, 16 students have participated in seed grant projects.

 Annual Research Day. During the day, Mayo Clinic Health System staff share abstracts on topics including pilot studies, retrospective case reports and series, and impactful research and practice improvement projects from recent years (including presented work at national conferences). Additionally, a poster session highlights clinical and scholarly research activity. Past poster session topics include the social determinants of health, the incorporation of osteopathic and



manipulative medicine into the primary care practice, and sports medicine nutritional research. Staff faculty, and students from both organizations attend the event.

- Lunch and Learn educational presentations. Held quarterly, the presentations connect staff at Mayo and UWL to opportunities and new developments in education, health care, and research. In February, the Lunch and Learn presentation focused on the use of artificial intelligence and its potential use in health care. Students are also welcome to attend these sessions...
- Joint faculty appointments, degree programs and research projects. Several UWL faculty have been appointed as Mayo Clinic Research Affiliates, which lays the foundation for faculty members to work with students and staff from both institutions to collaborate on clinical research. UWL students and staff, along with Mayo Clinic physicians are involved with research projects involving the effects of long COVID-19, peripheral vascular disease, body composition and health and performance determinants in male and female high school wrestlers.
- Combined scholarly activities. Together, researchers from UWL and Mayo have shared several recent successes including 47 conference abstracts, 32 published peer-reviewed publications, and given 13 presentations at national and regional conferences. These collective works focus primarily on sports medicine, metabolism, nutrition, body composition, load monitoring and the physiological demands of tactical occupations that include firefighters and ROTC cadets.



Chancellor Joe Gow, Paul Mueller, regional vice president for Mayo Clinic Health System in Southwest Wisconsin and Erik St. Louis, regional chair of Research for Mayo Clinic Health System in Southwest Wisconsin, are excited about these achievements, which would not be possible without the strong collaborative relationship between both institutions.

"This relationship allows the best and brightest in two outstanding organizations to prosper while conducting essential health and science research," says Gow. "UWL is thrilled to be part of the ground-breaking research that is providing invaluable health benefits. Our students get an opportunity to learn with some of the nation's leading health practitioners while addressing current health situations. It's a win-win for all."

"We are forging a very strong research collaboration with our colleagues at the University of Wisconsin-La Crosse, especially leveraging our mutual strengths in sports science and medicine, data science, and cancer research," adds St. Louis. "The annual Seed Grant program and Lunch and Learn presentations are growing steadily each year, and we are excited about continuing to build even stronger connections between our campuses. This strong connection and collaboration will improve the health of our community and better serve our patients in the region and beyond."

Research and teamwork are key to Mayo Clinic Health System's and UWL's mission and values. Both organizations are committed to working together to address the educational and patient needs in the Coulee Region.

"The research collaboration attracts highcaliber physicians, faculty, staff and students to the La Crosse area," says Mueller. "It also allows physicians to engage in scholarly work, hoping to find new treatments to care for our patients. Moreover, this enhances the student's educational experience and helps prepare them for the future workforce. Ultimately, today's research transforms into tomorrow's cutting-edge care and cure for our patients and communities."

In addition to the research agreement, Mayo Clinic Health System and UWL team up to host the annual Youth Sports Symposium and share athletic training and sports medicine services. Mayo Clinic Health System also provides on-campus access to Mayo Clinic services for UWL and Western Technical College students at the Student Health Center. Gow, Mueller and St. Louis are excited about what the future holds. They look forward to continuing to build a strong collaborative relationship between their organizations.

Left: UWL Assistant Professor Ward Dobbs, second from the right, oversees Exercise and Sport Science Department students working on a research project through the Seed Grant Program in cooperation with Mayo Clinic Health System. The arrangement has funded six health-focused research projects. The students include, from left, Micah Missall, Adriana Marquardt, Rachel Schmitt and Austin Westra.

Above: UWL Exercise and Sport Science Department students Anna Jacobson, left, and Makenna Carpenter are two of the students who have participated in the Seed Grant Program in cooperation with Mayo Clinic Health System. Led by teams of physicians and scientists from both institutions, seed grants often launch promising new research projects and provide valuable preliminary data to attract more substantial funding from external sources.

he College of Science and Health is now offering graduate students an opportunity to earn a Summer Graduate Research Fellowship for faculty- mentored capstone projects, theses and other scholarly activities.

CSH Dean Ju Kim wondered if such a program would be of interest to CSH graduate students and faculty during the summer months. The answer was loud and clear as a resounding "yes." Sixteen proposals were submitted in this inaugural year.

Campus leadership and faculty have echoed the timeliness of the fellowships for graduate students.

"I am very grateful to Dean Kim and the CSH leadership for prioritizing graduate student funding," says Meredith Thomsen, dean of Graduate & Extended Learning. "We know that our graduate students face a trade-off between needing time for research in the summer, but also needing to earn money to support themselves. The new fellowships are a critical step toward addressing that need."

Tom Kernozek, CSH associate dean, says it's a great alternative to finding a short-term summer job.

"Now, we have a mechanism to support graduate student summer work here on campus so that students can focus their efforts on their scholarly projects rather be scrambling to obtain a short-term summer job," he says. "This could impact their time to graduation by allowing more time to spent on their project."

The high-quality proposals were submitted across several CSH graduate programs. Projects ranged from studying the effects of exercise-induced exosomes on triple negative breast cancer cells to examining the temporal and spatial changes in sediment communities in the La Crosse River Marsh.

Naoko Giblin chaired the committee of faculty charged with vetting the proposals. The group awarded eight students \$6,000 each to:

- Cara Senn (Biology)
- Danielle Hudson (Biology)
- Jacob Hansel (Biology) Caleb Kasper (Biology)
- Mason Stenzel (Microbiology)
- Cedar Sekorski (Biology)
- Taylor Farrington (Microbiology)
- Kaitlyn Schneider (Biology)

SUMMER IS NOW THE TIME FOR GRADUATE RESEARCH FELLOWSHIPS

Paul Schweiger, associate professor in Microbiology, says the fellowship greatly impacted one of his graduate students, Taylor Farrington.

"We were having conversations about how she planned on trying to balance work and her thesis research this summer," Schweiger explains. "This funding will allow Taylor to focus fully on completing her thesis project. Dedicated summer research time will be invaluable to helping Taylor complete her master's degree and will ultimately lead to a more impactful project."

Show your support:

The UWL Alumni Friends Foundation is supporting summer graduate research fellowships.



Offer your support for graduate researchers



Offer your support for undergraduate researchers



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Madeline Gile, '23, at the NCAA March Madness Final Four.





THEY'RE SPORTING NEW KNOWLEDGE

port management majors are getting into the game of market research.

Students in Assistant Professor Sam Schmidt's class gained hands-on experience this spring by diving into assignments designed to help two real organizations with probing marketing questions. The UWL Athletics Department was looking for answers about student attendance at home games. And, the future United Soccer League Milwaukee Pro Soccer (MPS) team, laying the groundwork to play in 2025-26, sought answers on acquiring sponsorships.

"I thought both projects were very successful," says Schmidt, '13. "The data and research the students did was remarkable. I'm hoping that there will be impact from their research."

For UWL Athletics, Marketing Director Emma Lero plans to use the data to make decisions on how to increase attendance. Evan Warwick, marketing director for the future soccer team, was impressed with the students' ideas and plans to take them back to MPS leadership to potentially use as the organization starts reaching out to potential sponsors.

Students benefitted too. Schmidt says it helped them learn how to present to practitioners in the sport industry who can utilize the information to their benefit.

"The most salient feedback I received was that students really liked partnering with real sport organizations to do the project," he explains. "The presentations were high quality, and the students felt the importance as they were presenting."



Discover more about the sport management major.

Schmidt says the project also provided students with practical work skills: conducting, collecting and analyzing market research data; as well as selling their sponsorship proposals.

Students had to develop their own instrument, collect responses and then think critically in developing recommendations. Also, they had to research a city and its culture from afar, understand the best options for sponsorships there, and then sell it.

A few students also benefitted personally from the experience. They received internships in sport management because of their work on the projects.

Schmidt says the projects were so successful he plans to arrange similar high-impact projects for students in the future.

"I just love that both projects were mutually beneficial for the sport organizations and our students," he says. "We are always looking to build in opportunities for our students to work with sport organizations into our classes. I hope this is really the start of expanding those opportunities."



Assistant Professor Sam Schmidt, '13, helped his sport management students gain hands-on experience this spring by having them dive into assignments designed to help two real organizations with probing marketing questions.



Internships offer 'super, madness'

Sport management majors are making the most of internship opportunities. Through Living Sport, they've lived the dreams of going to the Super Bowl and March Madness.

May graduate Julia Biederwolf, '23, spent 10 days at the Super Bowl in Arizona in February. The trip worked perfectly around her UWL Athletics internship. Biederwolf is drawn to sport management because it's just never a boring day in the office. "Everything was go, go, go." Biederwolf says of her Super Bowl responsibilities, which included everything from crowd control and autograph signing lines to working on a pool party with celebrities. **See more about her experience.**

Fellow alumna Madeline Gile, '23, ended her NCAA March Madness finals internship by watching the games almost courtside. Among her many experiences there, Gile says her biggest takeaway was making connections.

"This experience helped me to meet so many people, and opportunities to go places I never would have before," Gile says. For example, the 600-level ticket she purchased to watch the finals game turned into near-courtside viewing seats through the networking she did throughout the trip. **See more about her visit.**

SUPERB SCIENTIST, MOTIVATIONAL MENTOR

TISHA KING-HEIDEN RECEIVES PRAIRIE SPRINGS ENVIRONMENTAL LEADERSHIP AWARD

or Tisha King-Heiden, a career in biology proved to be a pretty solid backup plan.

After realizing her childhood dreams of becoming a ballerina were unlikely to materialize, King-Heiden quickly became infatuated with sharks and the idea of working as a marine biologist.

A few decades later, she can say she made the right decision.

King-Heiden has taught in the UW-La Crosse Biology Department since 2008, sharing her passion for the subject with countless students, while leading research projects with critical significance to both wildlife and human biology.

For her efforts, King-Heiden has received the 2023 Prairie Springs Environmental Leadership Award for faculty, which recognizes original and inventive work promoting environmental education, conservation and restoration. The award is supported by Prairie Springs: The Paul Fleckenstein Trust.

"I am grateful to receive this award," says King-Heiden, noting her passion for working with students. "Being honored for doing my favorite part of my job feels a bit strange, but I appreciate the recognition of my efforts and hard work to provide opportunities for students to grow into the scholar they worked so hard to become."

King-Heiden's teaching and research focuses on ecotoxicology and physiology specifically, the impact of environmental pollutants on the growth and development of fish.

Because humans share certain developmental pathways with our distant fish ancestors, her research also has implications on human health.

This allows King-Heiden to connect the dots between seemingly loosely related branches of science, demonstrating for all students, especially those in the medical sciences, the profound significance of the natural environment.

"Not only are fish an important economic resource – they are culturally relevant to so many of us in Wisconsin," she explains. "I felt compelled to better understand the risks that these environmental pollutants pose to the sustainability of wild fish populations, as well as the potential health risks that these chemicals pose to human health. This began a journey of exploration that I now love to share with my research students."

King-Heiden, whose pre-UWL career included stints as a high school biology teacher and a field research technician, is now one of the nation's foremost experts in environmental toxicology.

She has held various leadership roles with the Society of Environmental Toxicology and Chemistry-North America (SETAC-NA) Board of Directors over the past several years, and currently serves as board president. She is also a member of the SETAC World Council. Locally, King-Heiden has presented at the La Crosse Science Café and the Agnes Tan Science Symposium at Viterbo University.

She has received grants from the National Science Foundation, the United States Environmental Protection Agency and the Wisconsin Department of Agriculture, Trade and Consumer Protection.

More than abstract research, King-Heiden's work is instructive for government agencies responsible for setting water quality standards.

But the most accurate measure of her success is perhaps the number of students she has mentored at both the undergraduate and graduate levels.

This includes publishing 15 peer-reviewed manuscripts with student authors since 2009 – an impressive figure, but one that only begins to tell the story of her impact.

"I love helping my students gain confidence in their ability to do research, especially those who hold identities that are not well represented within our field," King-Heiden says. "Truth be told, they don>t need much help – just someone to believe in them.

"Even if this is not what the student wants to do for the rest of their life, the experience helps them gain critical skills that they can take with them in their future careers." Professor Tisha King-Heiden, Biology, received this year's Prairie Springs Environmental Leadership Award for faculty. "Being honored for doing my favorite part of my job feels a bit strange," she says, "but I appreciate the recognition of my efforts and hard work to provide opportunities for students to grow into the scholar they worked so hard to become." December 2022 biology-aquatic science graduate Veronica Sannes received the university's \$1,000 Prairie Springs Student Excellence Award for her research on "Abundance of Microplastics in Freshwater Drum in the Upper Mississippi River."

PLASTICS PROBER

RESEARCH SPARKS EXCELLENCE AWARD

parked by a high school project involving some of Minnesota's 10,000 lakes, Veronica Sannes took that interest to become a biology-aquatic science major at UW-La Crosse.

Now, she's received the university's \$1,000 Prairie Springs Student Excellence Award for original and inventive work or research that advances the discipline. The award, funded by Prairie Springs: The Paul Fleckenstein Trust, also recognizes results in tangible and practical contributions to environmental education, conservation and restoration.

"It was very rewarding to see that other people thought the research I partook in was as valuable as I thought it was," says Sannes, who graduated in December 2022. "It is such an honor."

Her research on "Abundance of Microplastics in Freshwater Drum in the Upper Mississippi River" will contribute to ongoing studies in Biology Professor Eric Strauss' microplastics lab. Her goal, Sannes says, is to continue expanding knowledge and awareness of the quickly accumulating contaminant.

"Microplastics are an emerging threat to our environment, and with my project, I am proud that I was able to contribute to the research being done as well as share information about its harms with others," she says. "I'm glad that I am able to leave the project knowing that I made a lasting impact on microplastics research for our community and that the research will be able to continue."

Sannes expects the experience of conducting research and presenting findings to be valuable.

"It also taught me that I am really passionate about making science accessible to everyone and how I love sharing my knowledge with others," she notes.

Along with the lab work, Sannes says the project revealed how much she enjoys presenting and talking to people about the environment. She credits the experience for helping her land a position through AmeriCorps at WisCorps in La Crosse after graduating. She works in the native gardens, where she teaches others about environmental sustainability and the importance of native plants and animals.

Sannes reveled in being able to present her research at the Mississippi River Research Consortium in 2022, as well as on campus during the Dean's Distinguished Fellowship program and the Students for Sustainability club. As co-chair of Students for Sustainability, she helped secure a Green Fund grant to put stickers on residence hall room recycling bins informing students on what is recyclable.

Once she completes her AmeriCorps position this fall, Sannes plans to move to Minneapolis to pursue a career in the environmental field.

"I just think that teaching people of all ages and education levels about biology and sustainability is so important," she says. The Research Vessel Prairie Springs – a 32-foot, state-of-the-art, aluminum vessel supporting UWL's River Studies Center – is expected to be completed this summer and cruising the Mississippi River soon. Construction of the vessel is funded through a nearly \$500,000 gift from Prairie Springs: The Paul Fleckenstein Trust to the La Crosse Community Foundation.

Research vessel could hit the water this fall

Research vessel that will transform aquatic science education in Wisconsin is getting closer to hitting the water.

Faculty from the River Studies Center visited Seattle recently to meet with officials from Munson Boats, the company manufacturing the Research Vessel Prairie Springs – a 32-foot, state-of-the-art, aluminum vessel expected to be completed this summer.

"We're thinking not only about safety and how usable it is, but also about the functionality of it – which features it will be equipped



Eric Strauss

with," says Eric Strauss, professor of biology and director of the River Studies Center. "That's why we're really taking our time during the design phase. We want to make sure it's something our students will enjoy using for research as well as education."

Now, new design mockups offer a clearer picture of how the vessel will look and function once complete.

Professor Colin Belby, Geography and Environmental Science, and assistant director of the River Studies Center, says



A mockup of the Research Vessel Prairie Springs.

the vessel will be a major boost to the university. He expects it to unlock new opportunities for students, and faculty, as well as current and future state K-12 educators.

"The boats we have now are great, but the new vessel will allow us to get more students out on the water at the same time, with the capacity to do more things," Belby explains. "We'll be able to do different analyses – water sampling, sonar-based work, mapping features and habitats within the river system – and bring the program to a new level."

The vessel will have twin 225-horsepower motors, allowing for a top speed around 40 mph. Additionally, the vessel's catamaran hull will have a 20-inch draft, making it well-suited for the shallow backwaters of the Mississippi River.

The scientific features, paired with the performance-based design, will create new and impactful opportunities to explore the river, cementing UWL's role as a regional leader in aquatic science.

"When looking at other universities



Colin Belby

upstream and downstream," Belby notes, "I'm not aware of anyone with a vessel like this one."

The Research Vessel Prairie Springs will also serve as a cornerstone of UWL's new research partnership with J.F. Brennan Company, a harbor management and marine construction firm based in La Crosse.

Under the agreement, Brennan will store and maintain the vessel, while working with UWL to ensure curricula meet evolving industry standards.

"Our business, like any business, is fundamentally based on the ability to recruit, train and retain good people," says Matt Binsfeld, president and CEO of Brennan. "It's going to be a great opportunity to get the technology that we use into the hands of students."

Construction of the vessel is funded through a nearly \$500,000 gift from Prairie Springs: The Paul Fleckenstein Trust to the La Crosse Community Foundation.

Trustees Jay and Carolyn Scott made the gift in honor of Paul Fleckenstein, Carolyn's late brother, who was a powerful proponent of environmental education and conservation programs.

This donation, paired with a previous \$2 million gift assisting in the construction of the Prairie Springs Science Center, supports the Scotts' vision of UWL as a springboard for future generations of scientists and water professionals.

"Paul established the trust to support research and scholarship in environmental studies and education, wildlife habitat and protection, conservation, and ecological technology," Carolyn says. "The research vessel will add another dimension to fulfilling that mission on one of the great waterways in North America.

"As trustees, we believe Paul would be thrilled to be associated with this initiative. He also would be grateful for the partnership with J.F. Brennan and the creation of significant experiential learning opportunities for UWL students, research opportunities for faculty and the opportunity to advance the La Crosse community."

Once construction of the vessel is complete, faculty from the River Studies Center will return to Seattle for a sea trial and training session.

A christening and maiden voyage could happen as soon as this fall. UWLAX.EDU/CSH 27

FIELDHOUSEFRENZY

The new Fieldhouse on campus opened in January to rave reviews by alumni and students.

Located east of the Veterans Memorial Field Sports Complex, the 144,000 square-foot facility has a 200-meter NCAA competition track, an all-sport-surface infield, a second-floor walking/jogging track, modern locker rooms and meeting spaces, and capacity for 1,500 spectators.

The new building relieves congestion in Mitchell Hall and increases instructional space. And, it allows UWL to keep pace with the continued growth in athletic, recreational, and exercise and sport science programs on campus.

Construction costs were covered by university program revenue and student funds; no state tax dollars were used.





TOP GRADUATE PROGRAMS CSH programs among the four from UWL receiving national attention

U.S. News & World Report has recognized four UWL graduate programs in the top 100 of their disciplines. The CSH programs among them:

- UWL's Physician Assistant program ranked No. 15 nationally. The program has a unique collaboration with three leading Midwest health systems: Gundersen Health System, Mayo Clinic Health System and Marshfield Clinic Health System. It's tied with UW-Madison as the highest rated physician assistant program in Wisconsin.
- UWL's Doctorate of Physical Therapy program tied for No. 42 nationally. The program tied with six others: Samuel Merritt University, University of Central Arkansas, University of Indianapolis, University of Maryland-Baltimore, University of Oklahoma Health Sciences Center and the University of South Carolina.

The other two UWL programs were The University of Wisconsin MBA Consortium, No. 9 nationally, and UWL's Professional Studies in Education No. 52 among national online programs.

Meredith Thomsen, dean of UWL Graduate & Extended Learning, is not surprised by the rankings. She says they reaffirm the highquality faculty and students on campus.

"We know from our students' successes that we are doing a great job with graduate education, but it's always nice to see that hard work recognized in other ways," says Thomsen. "The national ranking also increases the visibility of our programs to potential applicants."

Thomsen says the ranked graduate programs have a tight connection to a student's career progression.

"The programs demonstrate the breadth of the graduate work being done at UWL," she explains. "It shows the ways in which we can adapt graduate education to meet the needs of different fields and of our students."

Learn more about UWL's graduate programs.



aley Jurecki came to Axim in May 2022 like a cool breeze. Not only was she impressive enough to be invited to attend and speak at Axim's internal Connect event after less than a year with us, but she also stands as the Group Lead and Solutions Engineer of the Cityworks team. This isn't her first foray into the Cityworks realm, though. Haley had previously been on a GIS team of two, administering Cityworks alongside GIS for the Public Works & Transportation departments for the city of Helena, Montana. There, she stood as the only woman in the GIS group and only one of three within the 30+ person department. This ratio encouraged her to "find my voice and stand firm behind it."

Haley is one person who is undoubtedly qualified to be the main talker in the room- she's a quadruple threat. She attended UW-La Crosse, dual majoring in Spanish and geography, with a concentration in environmental science and a minor in biology. Haley started on her UWL path, intending to head into the medical field, but with the demand of time spent in the dingy lab, she found the natural sciences more alluring and moved to the Geography Department. It took only one semester, and she declared - she knew where she wanted to be. To her, GIS was applicable, logical, and incorporated a broad knowledge base. It provided a place where analysis and visual portrayal are combined effectively to communicate the information to the audience. Conveying what she wanted her audience to know became more effective than writing a paper - it was portraying the information. She was able to give more depth and meaning to the digital maps we all carry in our pockets. She also forayed into leadership while sitting as vice president of the student body and president of the Geography Club for two years.

After graduating, Haley hit the road performing vehicular-based data collection using LiDAR, pavement analysis, and 360° imagery technology to support transportation systems in a job that required 100% travel all over the US. Through her time at school, her data collection role, the city of Helena, and now Axim, Haley has gained plenty of experience to share. The ability to listen to clients explain their pain points, interpret those identified pain points into a technical solution, and implement the solution effectively through GIS (or Cityworks) is a powerful soft skill that Haley has mastered. Understanding the why behind the represented

Alum featured in 'Women in GIS'

-Article by Emily Mulligan, courtesy of Axim Geospatial

data enhances the effect of the solution, rather than being fully immersed in the nitty gritty.

Haley would also like the remind fellow females to feel empowered to ask questions. "Curiosity leads to so much more." Asking those questions will almost always lead to further questions, bringing more information and benefits to the team.

Taking the (sometimes intimidating) initial step of speaking up and asking the why helps nail down the whole purpose of the solution rather than just providing tidy data. "It begins the cascade of questions that brings meaning to the work at hand." Knowing more about the client's motivations and needs will create a better product for their target audience. Always ask the question.

When Haley isn't shaking up Axim's Cityworks team, she drinks in all that the great outdoors have to offer. Being blessed enough to live in Big Sky Country has deepened her passion for downhill skiing, canoeing, hiking, photographing natural scenes, and planning the next adventure. She also finds serenity in yoga, coffee, reading, and playing cards. These joys have led her to live in Chile for six months, where her Spanish fluency excelled, to backpacking around Patagonia and solo backpacking Isle Royale National Park off the shores of Minnesota.

Haley Jurecki is truly a woman in GIS to follow.

NEW FACULTY



Kim Servais

Health Professions - OT - Clinical Assistant Professor B.S. UW-La Crosse (Psychology) | M.S. UW-La Crosse (Occupational Therapy)

Specialties: Older adults, adult physical dysfunction, rehabilitation management, community health, pelvic health



Shane Murphy

Health Professions - PT - Assistant Professor B.S. UW-Eau Claire (Athletic Training) | M.S. Indiana University - Bloomington (Biomechanics) | Ph.D. University of Northern Colorado (Biomechanics)

Specialties: Lower extremity biomechanics of gait and posture

THREE FROM CSH AMONG TOP GRADS

Three students from CSH were among the seven earning 2023 Outstanding Graduates honors.



The Murphy Award for Academic Excellence recognizes UWL's top graduating scholar, as chosen by the Scholarship and Awards Committee.

Kaitlyn Michalek graduated with a Bachelor of Science majoring in biology with a biomedical science concentration and pre-dentistry track in May. She had minors in chemistry and Spanish. Michalek, from Waukesha, plans to attend Marquette University School of Dentistry and hopes to work as a general dentist in a rural setting.



The Strzelczyk Award in Science and Health recognizes an outstanding senior in the College of Science and Health for academic achievement, along with campus and community service. Robert, '54, and Judy Strzelczyk, who funded many physical therapy projects and scholarships, endowed the award in 1996.

Hannah Soczka earned a Bachelor of Science summer 2022, majoring in biology with a minor in public health and community health education. She completed an undergraduate research project in public health, studying UWL students' exposure to health literacy within their pre-health curriculums. From Franklin, she will attend the Medical College of Wisconsin in Milwaukee to earn a doctor of medicine degree.



The Rosandich Graduate Thesis and Dissertation Award recognizes the best graduate thesis, based on originality, impact and writing quality. The award is funded by Thomas P. Rosandich, '54

Thomas Roehl, who earned a master's degree in biology in December 2022, received the award for his master's thesis, "Examining the genetics of mushroom development in the cultivated edible mushroom Flammulina velutipes." He is currently a doctoral student at Clark University.

FINALEXAM

With his camera, Mark Devine, '93, documents the beauty he sees. But after tens of thousands of pictures, it's really photography that has captured him.

evine, who attended UWL as a nontraditional computer science major in his 30s, spent a career in information technology until retiring in 2021. That's when the La Crosse resident returned to his childhood passion of photography. Having spent many hours perfecting his craft with the onset of digital cameras in the early 2000s, Devine photographed landscapes and cityscapes anything that caught his eye. The fruits of his labor can be seen not just in the beauty he captures, but also in the fresh, creative ways he captures it. His work, much of which is for sale, is displayed at Gallery 1802 in La Crosse, 1802 State St. Here's an infrared image of the lacrosse players he captured downtown La Crosse.



Visit his website.

