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

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Science & Health News VOLUME 19, NUMBER 1, WINTER 2022-23



MAKING A HEALTHY COMMUNITY



in this issue

12 Reptile read

As professor and certified wildlife biologist in the Biology Department at UW-Whitewater, Josh Kapfer, '99 & '02, is helping inspire students and others by getting them outside to find wildlife. He's taken that a step further by being a co-author and primary editor of a book, "Amphibians and Reptiles of Wisconsin."

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Science & Health News

UNIVERSITY OF WISCONSIN-LA CROSSE COLLEGE OF SCIENCE AND HEALTH NEWSLETTER WINTER 2022-23 VOL. 19, NO. 1

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CLASS NOTES POLICY Update your address and provide a class note for the Lantern at uwlax.edu/alumni

ON THE COVER: UWL Associate Professor Dan Plunkett's students in Recreation Facilities Maintenance worked with representatives from La Crosse Parks, Recreation, and Forestry Department and the Outdoor Recreation Alliance to build quiet zones for meditation, forest therapy and other educational purposes at Hickory Trail.

Students prepare La Crosse trail for community forest bathing

Go for a walk in the woods.

Leave your cell phone behind.

Close your eyes and open your senses – one at a time.

Disengaging from a hectic lifestyle and engaging in a slow, silent and mindful walk using your senses is called forest bathing or shinrin-yoku in Japanese.

The practice, originating in Japan in the 1980s, is proven to reduce stress and improve overall health. It's a chance to reconnect to the present moment and truly notice what is happening in the physical world.

Forest bathing is becoming more visible in La Crosse, thanks to UWL students in the Recreation Management and Therapeutic Recreation programs.

Students, along with La Crosse Parks, Recreation, and Forestry Department and the Outdoor Recreation Alliance, spent several days last fall outfitting trails in Hixon Forest for forest therapy awareness and practice. The students in a recreation facilities maintenance course taught by Associate Professor Dan Plunkett added quiet zones for meditation, forest therapy, and more along the Hickory Trail. A forest therapy class created forest therapy engagement messages to go on interpretive signs for the zones for trail users.

Those improvements came after Assistant Professor Namyun Kil's Nature and Forest Therapy class completed a community trail assessment project in 2020, 2021 and 2022 with the La Crosse with La Crosse Parks, Recreation, and Forestry Department and the Outdoor Recreation Alliance. The project aimed to determine the suitability of Hickory Trail in Hixon Forest for positive forest therapy experiences.

Senior and Therapeutic Recreation Major Paige Coleman says this practice allows you to connect with the Earth for your own selfcare or the care of others. You learn P.O.P., she says, or pleasure of the present moment.

Kil's classes are working to spread the practice beyond UWL students. They've coordinated programming in forest bathing for children at Chileda and Aptiv, centers dedicated to serving children and adults with disabilities, cognitive and behavioral challenges.

Coleman plans to earn her master's in therapeutic recreation at UWL and wants to eventually work with children and people with physical disabilities. Forest bathing could be a great tool, she says.

"This is something everyone needs in life whether they are disabled or not," says Coleman.

Forest bathing FAQs:

For more information about forest bathing and how to do it, read this FAQ on Forest bathing: www.uwlax.edu/currents/whatis-forest-bathing



Above: Students take part in creating a forest therapy area in La Crosse's Hixon Forest.

Right: UWL student Paige Coleman does a yoga pose on a wooden structure that students in a recreation management course added for quiet time and meditation among the pines on the Hickory Trail. This designated area for forest therapy is less than one mile into the woods on the Hickory Trail.

UWLAX.EDU/CSH 5

MAKING A HEALTHY COMMUNITY

A DOSE OF REALTY

Scholar program taking students to rural Wisconsin

UWL students in health-related programs are participating in the Wisconsin Area Health Education Centers (AHEC) Scholars Program to serve rural and underserved communities in Western Wisconsin.

"I have participated in many different kinds of programs throughout my educational career, but AHEC Scholars has by far been the most impactful. I use skills that I acquired with AHEC on a daily basis with my patients. I would recommend this program to anyone who is eligible."

AHEC Scholar

Wisconsin AHEC offers a two-year program designed to enhance and broaden a student's healthcare training. The competitive program attracts up to 120 students statewide annually.

Early in 2022, 23 students from Occupational Therapy, Physical Therapy, Physician Assistant and Public Health programs took part. All were entering their final year of their program. Each year as an AHEC Scholar, students participate in a combination of didactic education and community-based field placement in a Wisconsin rural community and/or with underserved populations. Educational and training activities support eight core topics: interprofessional education; behavioral health integration; social determinants of health; cultural competency; practice transformation; current and emerging health issues; virtual learning and telehealth; and connecting communities and supporting health professionals.

Students participating expand their knowledge of the health challenges and contexts of rural and underserved populations in Wisconsin to become better healthcare professionals, says Wisconsin AHEC Education and Outreach Coordinator, Brittany Thompson. She is excited to work with the exceptional and professional group of UWL students.

Associate CSH Dean Tom Kernozek says the college's participation shows its commitment toward meeting the healthcare needs of western Wisconsin's rural and underserved communities. AHEC Scholars earn a \$1,500 stipend over the course of the experience during their two-year commitment with successful achievement of program milestones.

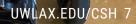
The Wisconsin AHEC System is a non-profit organization funded by federal grants, the State of Wisconsin, the state's health professions educational training programs, and local communities. It consists of seven regional centers and one statewide program office. Wisconsin AHEC is a health professions educational and outreach program that is part of a nationwide network of programs working to improve accessibility and quality of primary health care while encouraging universities and educators to partner in addressing local health care problems. More info at: www.ahec.wisc.edu and www.scenicriversahec.org

UWL AHEC Scholars and occupational therapy graduate students Amanda Klaeser, left, and Alyssa Swenson, discuss therapeutic procedures in the Health Science Center classroom. For their rural field experiences, Klaeser worked at Vernon Memorial Healthcare in Viroqua while Swenson traveled to St. Croix Health in St. Croix Falls. "This has been a wonderful program and I have gained so much over the past two years. Thank you for giving us the opportunity to learn so many important topics and supplemental skills as we become the healthcare providers our communities need and deserve."

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AHEC Scholar



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MAKING A HEALTHY COMMUNITY

Students in a UWL 400-level assessment therapeutic recreation class ran an assessment clinic and bike fitting with community members in the Can't Stop Me Parkinson's Program. The STAR Center disease-specific exercise program focuses on improving participants' tone, rigidity and overall function.

BARG

New bike helping students, community

A new adapted bicycle on campus is getting a workout by students learning how to support those with disabilities participate in recreation.

The Recreation Management and Therapeutic Recreation Department partnered with UWL Outdoor Connection to purchase the tandem recumbent bicycle. Along with helping students get hands-on experience with assessment and adapted equipment, the bike is also available for community members to rent.

The new terra trike recumbent bicycle is available for students and community members to rent through Outdoor Connection

Assistant Professor Tommy Means hopes the new bike becomes popular among service-learning partners, students and the community. He sees potential to write grants to acquire more adapted bicycles while developing a significant adapted bike service-learning program.

As part of a 400-level assessment class, therapeutic recreation students ran an assessment clinic and bike fitting in September with community members in the Can't Stop Me Parkinson's Disease Program.

The clinic gave students hands-on experience with assessment and adapted equipment for adults with Parkinson's disease. And, it introduced those with Parkinson's to an option for enhancing their physical fitness through recreation.

Means is excited his students gained real-life experience in situations they will eventually see on the job.

"Learning how to do assessments in the classroom is difficult," explains Means.



Assistant Professor Tommy Means, Recreation Management and Therapeutic Recreation Department, standing, leads a 400-level assessment class therapeutic recreation student in helping run an assessment clinic and bike fitting with community members in the Can't Stop Me Parkinson's Program.

"Hypothetical case studies and peer practice certainly have their place; however, they cannot replicate a real-life experience where the student actually has to navigate the intersection of administering an assessment while navigating the interpersonal communication with the client."

Assessments don't always go as planned, notes Means, so being able to navigate those problems is a great learning opportunity.

"This specific experience also allows students to integrate assessment with adapted equipment use, which is a common practice in our field," he says. "Being able to collect assessment data, and then assist a client with adapted bike fitting is a direct application of a professional skill."

Means says clinicals also provide the opportunity to help a non-profit organization like STAR. The STAR Center disease-specific exercise program focuses on improving participants' tone, rigidity and overall function.

"STAR is still relatively new, but the program helps build a partnership with UWL students and faculty," he says. "We hope to build this partnership in a way that allows for assessment clinics to start using our outcomes in research to validate the efficacy of the programs that STAR is offering."

Means says students have held similar assessment clinics in the past with students and the STAR Sled Hockey team.

"Our Recreation Management and Therapeutic Recreation Department faculty do a lot in the community," he notes. "Our therapeutic recreation students have regular programs with the Housing Authority and Aptiv. Our faculty also have regular classbased experiences through the Tourism Research Institute."

POWERFUL PARTNERS

UWL, Brennan agreement strengthens college experience

The J.F. Brennan Company is partnering with UWL to strengthen research, curriculum and the company's talent pipeline.

The Memorandum of Understanding (MOU) signed Oct. 18 will get students out on the Mississippi River to use technology they'll find when they head into the workforce – and give them an opportunity to experience what it's like to work for a company like Brennan.

"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 J.F. Brennan Company. "It's going to be a great opportunity to get the technology that we use into the hands of students."

Binsfeld says the new public-private partnership was based on the query of how to expand a student's growth through experiential learning outside the classroom. "We looked at how we could work more closely with UWL and the River Studies Center to provide the experiential learning opportunities for young people, so that they're not only getting the high-value and first-class in classroom experience, but they're taking that and they're putting that together with these opportunities to do actually what we do as an organization," says Binsfeld.

Students will benefit because they will experience a real-world situation. They will discover how people engaged in large projects have to be focused on effective communication, not just on the technical skills associated with running the instrumentation.

The partnership between UWL and Brennan was expanded through the initiative of Prairie Springs: The Paul Fleckenstein Trust and the UWL College of Science and Health, with the assistance of the La Crosse Community Foundation. Earlier this year, it was announced that Prairie Springs: The Paul Fleckenstein Trust gave the La Crosse Community Foundation \$430,000 to fund construction of a new research vessel for UWL's River Studies Center. Brennan will provide maintenance support, a storage location and instrumentation expertise for the new vessel.

For many years, Brennan has opened its doors to UWL students for paid internships. In return, the company has been able to recruit many of those interns as reliable, full-time employees. The MOU is expected to further expand this partnership to provide even more job-ready employees.

Chancellor Joe Gow, front, left, shakes hands with Matt Binsfeld, president and CEO of J.F. Brennan Company, at the company's headquarters in La Crosse. They were joined by UWL alumni and administrators and other Brennan leaders.

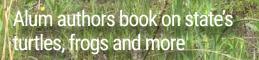


Ryan Sands, a 2015 UWL graduate, says the new partnership of his alma mater with his employer J.F. Brennan Company will help students receive specific skills making them job-ready. "This should build networking with local employers and provide training on potential career fields for future students," says Sands.

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BRENNAN

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G rowing up in Stoughton, Wisconsin, Josh Kapfer always had an intense interest in wildlife – particularly amphibians and reptiles.

Like many, his first wildlife experiences were capturing turtles and frogs he found outside. His UWL experiences connected this interest with the sciences.

"I also really liked dinosaurs as a kid, and in my young, naïve mind, the closest living thing to a dinosaur was a lizard," he explains.

Now, as professor and certified wildlife biologist in the Biology Department at UW-Whitewater, Kapfer is helping inspire students and others by getting them outside to find wildlife.

"I often tell folks that I can regularly take the college students I teach in field-based classes at UWW out and have them hold frogs or turtles or snakes that we encounter," he says. "I can't, however, easily have them hold a coyote or a bald eagle, so amphibians and reptiles provide rare opportunities for us as a society to directly connect with wildlife."

Kapfer has taken that a step further by being a co-author and primary editor of a book, "Amphibians and Reptiles of Wisconsin," with co-editor Donald J. Brown of the U.S. Forest Service Pacific Northwest Research Station. It's an extensive 1,176-page hardcover book weighing around nine pounds. Kapfer graduated from UWL with a bachelor's in biology in 1999 and a master's in aquatic science in 2002. He earned a doctorate in ecology and evolution from UW-Milwaukee in 2007.

"The book has an intimidating size, but I hope that it won't deter the individual who is casually interested in natural resources, wildlife, or amphibians and reptiles," Kapfer says.

UW-Whitewater Professor and Certified Wildlife Biologist Josh Kapfer, '99 & '02, recovers data from a temperature data logger attached to an Ornate Box Turtle (a state endangered species) in Sauk County, Wisconsin.

The book's size is because the editors wanted to create a robust, scientific manuscript that is well-supported by referencing scientific literature and data. But they also took great pains to design the book for the casual reader.

Every species accounted for in the book starts with a summary, so readers can gain a quick understanding of the organism without having to wade through its entire account.

Second, there are anecdotal stories that sometimes have little scientific relevance, but are interesting and fun to read, says Kapfer. These anecdotal stories, referred to as "Natural History Boxes," are sprinkled throughout each chapter and species account. There are also hundreds of full-color figures and illustrations.

"Even the casual reader paging through the work can hopefully find interesting things to look at and read," says Kapfer.

While it includes a welcoming tone for casual readers, there are also more serious aspects. These include a substantial amount of information on the systematics, identification, ecology, conservation and management of each species.

The book's introductory chapters include information on prominent historical figures in Wisconsin herpetology, a large conservation and management chapter, and a review of how climate change could impact Wisconsin's amphibians and reptiles. While including all these details in a regional natural history guide isn't typical, Kapfer says it was necessary – particularly the information on conservation, management, and climate change.

"Given that we are currently facing dramatic declines or losses of wildlife species globally, Donald and I felt strongly that the book should pay much greater attention to conservation than is the norm," he says.

Kapfer says it was as a UWL undergraduate that he discovered how being outdoors connects with scientific investigation. This realization that being an effective biologist can include working in the wild with living organisms, not just sitting in a lab, came while researching with the late Biology Professor Daniel Sutherland.

"To this day, I think of Dan often and miss him," Kapfer says.

Later while working on a master's at UWL, Kapfer says retired College of Science and Health Dean Mark Sandheinrich helped him evolve from an unseasoned researcher into a blossoming, effective scientist.

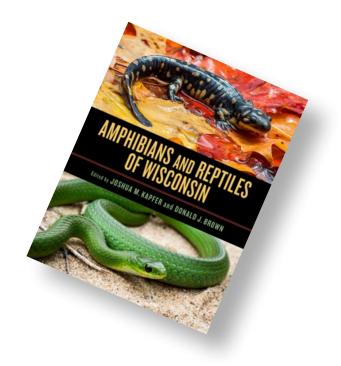
"Mark taught me a great deal about how to conduct strong scientific investigations and analyses, but also how to be an effective scientific writer," explains Kapfer. "Without the guidance of these two individuals and others, such as my doctoral advisor Jim Coggins at UW-Milwaukee and colleague Robert Hay from the WDNR (Wisconsin Department of Natural Resources), my life today would be completely different."

Kapfer's life-long passion for the state's amphibians and reptiles led him to spend nine years working on the book with his co-editor. With the last book on Wisconsin's herpetofauna published more than 50 years ago, he knew there was need for an updated reference on this group of organisms. The previous review, published by Richard Vogt, is a favorite of Kapfer's and is a sort of a standard in how to write regional natural history books.

Kapfer says he and Brown collaborated with more than 50 of the region's top herpetological experts to complete the publication. He says the book offered an outstanding opportunity to bring many professional herpetologists and ecologists together on a large project that will hopefully have a lasting effect.

Since the book's release in early November, Kapfer says feedback from both professional and casual readers has been positive.

Get your copy at just about any place you buy books, or from UW Press



Camp offers river adventures, water education and leadership opportunities

Adalee Thao, a high school junior from Milwaukee, had heard that UW-La Crosse was a good science school, so she was interested in checking it out. She had the opportunity to do so as a participant in My River Adventures Camp (MRA), a pre-college summer camp at UWL supported in part by the Freshwater Collaborative of Wisconsin.

"The counselors were awesome, and all the people there made it really fun," Thao says. "I learned how to be a leader. I also learned a lot about biology and environmental science."

The weeklong camp is part of the university's efforts to recruit students for careers in STEM, specifically water-related sectors, such as biology, ecology and aquatic science, where skilled professionals are in high demand.

A primary goal of the camp is to address the lack of diversity in the water sector and to expose students from underrepresented communities to careers in STEM. Funding from the Freshwater Collaborative made it possible to provide the camp, as well as food and lodging, free of charge to 30 students. These funds greatly increased the camp's accessibility, regardless of a student's socioeconomic status.

"The importance of this camp is to provide a campus-based experience for students who may not have normally had an opportunity like this," says Laura Lauderdale, Pre-College coordinator at UWL and the camp's director. "Participating in faculty sessions in college academic buildings makes the possibility of attending college tangible and attainable for these students."

Faculty members Adam Driscoll, Tisha King-Heiden, and Brian Pompeii from the university's River Studies Center led instructional sessions and visits to regional rivers and marshes in the surrounding area for fieldwork and observation. Participants were also assigned an undergraduate mentor who worked one-one-one with them as they engaged in various handson activities, including using GPS to navigate marshlands, flood plains and natural habitats; analyzing and identifying fish and plant species as part of DNR sampling activities; learning about water-quality sampling; and viewing specimens under a microscope.

"I learned a lot about bodies of water, fish and wildlife in the marsh and rivers," says sixth grader Matheo Huerta Perez.

The experience also offered leadership and hands-on learning opportunities to the nine camp mentors. UWL undergraduate Maddie Renaud, majoring in middle childhood/early adolescent education and minoring in at-risk youth and childcare, and has been involved in the university's Pre-College programs since 2018. Working as the camp assistant and a mentor will be beneficial to her career.

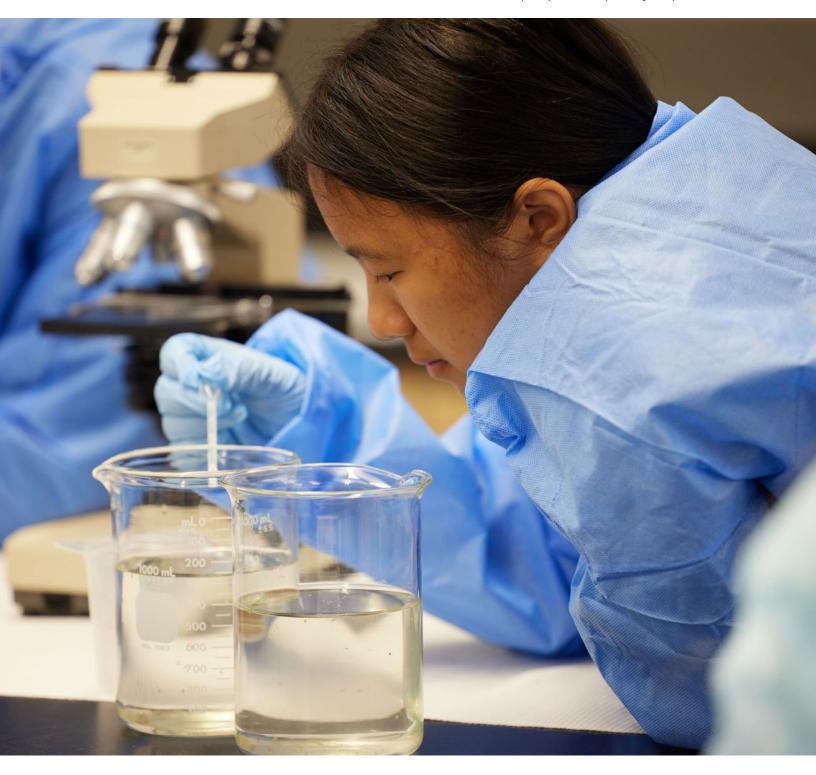
"I have learned many valuable skills and lessons throughout my experience with the MRA camp both about the value of our local water sources as well as the confidence to be able to facilitate, engage and build meaningful connections with Wisconsin youth," Renaud says. "I am extremely grateful to have been a part of this collaboration and hope to see this program continue in the future, as the city, staff and community partners of UW-La Crosse enlighten these kids' lives in a multitude of ways."

In addition to the science component, camp participants and their undergraduate mentors learned more about careers within the STEM fields and freshwater sciences. Many students were encouraged to try new things.

Participating in the camp gave high school junior Nadalee Thao the opportunity to check out UWL as a potential college.



High schooler Blossom Xiong was one of 30 students to participate in UWL's pre-college camp.



As a literal power couple, Peter, '08 & '10, and Amy, '09, Fitschen have built a successful fitness consulting company, FITbody and Physique LLC, based in Stevens Point.

a EXIT C

n unexpected package arrived in my biochemist

n unexpected package arrived in my mail last year: the book "Bodybuilding: The Complete Contest Preparation Handbook."

It warmed my heart that a former student, Peter Fitschen, acknowledged UWL and me as one of his advisors. With amusement, I remembered his many achievements.

Peter was our first student to graduate with a nutrition minor and among the first with a

biochemistry major in 2008. He was the first to engage in a credit-bearing Field Experience in Nutrition class, hosted by Century Foods International in Sparta. His experience provided a model for others.

As an undergraduate, Peter could be found in Cowley Hall or the Health Science Center toting his milk carton full of water, consumed to assist his athletic performance goals.

Fitschens continue passion for fitness, nutrition

He cracked thousands of black walnuts for an undergraduate research project that led to his Master's of Science in Biology: Physiology Concentration thesis, "Cardiovascular effects of black vs. English walnut consumption" in 2010.

Peter was widely admired for his Lake City, Minnesota, farm-kid work ethic, wicked intellect and astounding ability to consume a very large amount of food in a very short time. He came to UWL for physical therapy but discovered a completely different path.

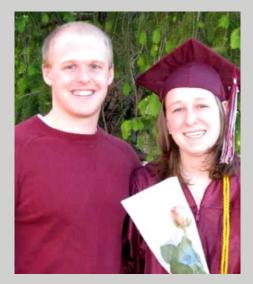
Work at Goodwill Industries led Peter to find his soulmate and business partner, Amy Kaphingst, of Freedom, Wisconsin. Some might say Amy stole Peter's heart. Amy, an '09 exercise and sports science major, eventually earned her master's in clinical exercise physiology in 2010. Her thesis, "The effects of music tempo vs. percussion vs. beat frequency on exercise intensity," was supervised by Professor Emeritus Carl Foster.

Peter and Amy had mutual interests in health and fitness that gave them a lot to share. They worked to support each other, each giving a little more at different times during their career progression.

When Peter joined the doctorate program in nutritional sciences at the University of Illinois, Amy got a job as a lab monitor at Parkland Community College in Champaign. Later, she took a full-time job as an exercise physiologist at Carle Hospital, supervising EKG, Holter monitors and stress tests, with clients in Phase I/II/III cardiac rehabilitation, spending one year with that organization as a lead tech.

After Peter defended his dissertation, "Effects of beta-hydroxy beta-methylbutyrate (HMB) supplementation on lean mass, strength, and physical function in hemodialysis patients," the Fitschens moved to Stevens Point where Amy was employed as an exercise physiologist with Ascension.

After seven years there, Amy became the fitness programs manager at UW Steven's



Peter, '08 & '10, and Amy, '09, Fitschen are active in professional organizations and maintain UWL ties. They support the La Crosse Exercise and Health Program, which fosters mutually beneficial relationships among UWL faculty, staff, and students and the La Crosse community.

Point, managing the facility and budget, as well as student employees.

Amy is proud to positively impact others. While working in healthcare, she was involved in making people comfortable and safe in uncertain conditions. In her current role, it's guiding and encouraging students.

In graduate school, Peter began coaching competitive body builders online. Peter has found no compelling reason to do anything else other than helping others reach their fitness and competition goals since.

Both won awards during graduate school to support and acknowledge their research and published graduate work. When asked if he would do anything differently, Peter said, "I don't know that I would change anything."

As a literal power couple, Peter and Amy have built a successful fitness consulting

company, FITbody and Physique LLC. They've impacted many competitive body builders interested in using evidence-based nutritional and training practices to improve performance and give them an edge.

The Fitschens don't just preach. Peter won his Natural Pro card in 2012 and continues to compete as a Natural Pro bodybuilder. He has coached clients to over 50 Natural Pro card wins and over 20 drug-tested professional titles in bodybuilding..

Amy has run marathons but more recently competes in physique and strength sports. "The things my body is capable of always amazes me," she says.

The Fitschens are active in professional organizations and maintain UWL ties. They support the La Crosse Exercise and Health Program, which fosters mutually beneficial relationships among UWL faculty, staff, and students and the La Crosse community by providing Adult Fitness and Cardiac Rehabilitation Program opportunities and continuing education workshops for professionals.





Article by Peg Mahr Professor, Biology

NEW DEAN

Ju Kim leading College of Science and Health

longtime physicist and former dean at Central Connecticut State University is heading up the College of Science and Health.

Ju Kim became the college's dean on July 1 following a national search. "I am honored and excited to have this opportunity to work with excellent faculty and staff of the College of Science and Health for success of UWL students," says Kim.

Along with building those opportunities, Kim says he plans to work with faculty and staff to collaborate across campus to create new interdisciplinary options for students by building on the strengths of the college.

"I see that CSH has excellent faculty and staff and has many strengths for providing excellent educational opportunities," he notes. "I hope to build on the excellent work of the previous deans of the college to improve CSH for the benefit of UWL students."

Kim intends to draw from his previous positions, where he has worked with faculty in a wide range of disciplines in science, engineering, health and technology. Along with teaching and research, he has served as a department chair, associate dean and dean during his higher education career.

Kim holds a Bachelor of Arts in physics and chemistry from the University of California San Diego and a doctorate in physics from the University of Chicago. His previous teaching and administrative positions have been at the University of North Dakota, University of Houston-Clear Lake and Central Connecticut State University.

Ju Kim became the CSH dean July 1 following a national search.

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TOP INNOVATOR

King earns state innovation honor

Physics Professor Seth King was named the Carl E. Gulbrandsen Innovator of the Year by WiSys. The non-profit WiSys works with UW System faculty, staff, students and alumni to facilitate cutting-edge research programs, develop and commercialize discoveries, and foster innovative and entrepreneurial thinking across the state.

Physics Professor Seth King has received a top award from a state nonprofit organization that works with the UW System

King, who has taught on campus since 2009, was named the Carl E. Gulbrandsen Innovator of the Year by WiSys. The award is given to UW System faculty, staff or students who make exemplary contributions as a WiSys innovator.

WiSys works with UW System faculty, staff, students and alumni to facilitate cutting-edge research programs, develop and commercialize discoveries, and foster innovative and entrepreneurial thinking across the state.

King embodies the ideals of a WiSys innovator – he is an inventor, scholar and educator. He has worked on two inventions with WiSys.

One of the inventions, developed in collaboration with former UWL Chemistry Department Faculty Member Daniel Little, is an "extremely simple way," says King, to functionalize graphene platelets with transition metal oxides. While initial applications for this work were focused on solar energy, batteries, and consumer electronics, the work has transformed to examining the antimicrobial properties of these materials. King is currently working on a new project with UWL Associate Professor of Microbiology Xinhui Li.

King is a collaborator on the second invention led by UWL Assistant Professor of Chemistry Sujat Sen. That work focuses on a unique electrochemical .technique used to deposit zinc films onto steel with controlled crystallographic texture. This controls the crystal structure and can be utilized to improve the galvanization process to protect steel from corrosion. King has received more than \$143,000 in UW System Ignite Grant funding over the past decade. He is an active supporter of student research, where most of the funding has been used to support student researchers, including summer research stipends and materials needed to complete projects.

"I firmly believe that research makes science real," King explains. "I think it is extremely important that students get into a lab and apply the theory they learned, or will learn, in the classroom to a realworld application. It is the best teacher for illustrating that idealized theory and laboratory application are are two different different things."

King's current research is on the antimicrobial properties of graphene-transition metal oxide nanocomposites. He's excited about the project because it expands his expertise and has allowed him to establish a new collaboration with more UWL Microbiology Department faculty. King is also working on analyzing archaeological materials with the Archaeology Department and the Mississippi Valley Archaeology Center.

King views his work with WiSys as a way to give back to the UW System.

"I have enjoyed being able to join the UWL faculty and continue on the strong tradition of undergraduate research that UW schools have built over many years," says King, who holds degrees from UW-Eau Claire and UW-Milwaukee.

King received the award at WiSys's SPARK Symposium held at UWL Aug. 1.

OFFERING
HANNI COWLEY
FOR MIDDLE SCHOOLERS



La Crosse area middle schoolers took part in UWL's Hands-on Science Middle School STEM Summer Camp.

n September 2019, Hanni Cowley and Polly Berra were new to UWL's occupational and physical therapy programs. They responded to an email to provide a hands-on workshop for the UWL Middle School STEM Camps. However, COVID-19 disrupted "hands-on" plans for summers 2020 and 2021.

Two years later, 'Girls in Science' and 'Boys and Science' returned. But this time, the two long-running camps were rolled into one: "UWL's Hands-on Science Middle School STEM Summer Camp."

Over two days, campers could participate in four different sessions offered by UWL faculty and staff to encourage experimentation, investigation and involvement in math and science.

To provide more health-related science opportunities and exposure, Hanni and Polly created two health professions sessions: physical and occupational therapy. When the sessions began in June, Hanni and Polly were unsure how the workshops would unfold. Would students be interested and participatory? Were enough activities planned? What is the best way to effectively manage 15 middle school students for two hours?

Hanni and Polly nervously anticipated high energy levels, short attention spans and a desire to be constantly entertained. Instead, they discovered pure curiosity, desire to dig deeper into the "why," wanting to "do," joy in connecting with peers, and lots of questions. To their relief, the sessions were not only successful, but also fun.

"Providing an opportunity for students to explore their own curiosities, gifts and talents was rewarding," says Hanni. "Throughout the entire process, the College of Science and Health's middle-school camp staff was supportive and organized. Given the opportunity, I would absolutely offer another session." To provide more health-related science opportunities and exposure to area middle schoolers, Hanni Cowley and Polly Berra created health professions sessions on physical and occupational therapy.

Polly agreed. "I had so much fun with these middle-school camp students, and their energy was contagious," she says. "They were very eager to learn, explore and create, which are essential qualities for aspiring occupational therapists."

Here are a few tips Hanni and Polly shared from their first go around:

- · Keep it simple.
- Provide prompts to encourage students to keep asking "why."
- Plan activities where students can move.
- · Make the activity like a game.
- Don't underestimate the abilities of middle-school students.

Based on feedback from Camp Director Spencer Hulsey, the two new health professions camp sessions were very popular.

"Your sessions were two of the highestranked for the whole Hands-On Science program," notes Husley. "I hope you had as much fun as the students did."

"Kid's College" is planned for April while "Hands-On Science" resumes this summer. Those interested in hosting or having children participate in future middle-school camp sessions should contact Hulsey at shulsey@uwlax.edu.

The two campus sessions-

• Occupational Therapy: Hold onto What's Important! Explore the health profession of occupational therapy. Learn to test and treat hand weakness, then explore your environment using tools that help people with disabilities do the things that are important to them.

• **Recording Human Movement** The human body is amazing. The brain sends electrical signals to contract muscles, and muscles pull on bones to create movements like jumping, running and balancing. Learn how technology can view and measure muscle activity to capture human motion, as well as how this information can be used to improve health, prevent injuries, and even create realistic character movements in movies and video games.





Hanni Cowley, Clinical Assistant Professor Health Professions



Polly Berra, Clinical Assistant Professor Health Professions

This was a labor of love, sweat and tears during the height of the pandemic. My team of editors, Jody Early and Cicily Hampton and I worked with Oxford University Press and secured this project in fall 2019. We began the process of finding the leading health education and public health advocacy experts in our field that spring, 2020.

Then, COVID-19 hit. Most of our co-authors were either front-line public health workers, researchers, faculty

and advocates that now worked from home, juggled teaching and working full-time online, providing childcare and extensive caregiving roles unlike any experienced before.

In fall 2020, we launched the writing with a Zoom call with all our co-authors. We rolled up our sleeves despite the raging virus, health disparities, racial reckoning and political landscape that provided an rather-bleak outlook.

None of us are afraid to speak up and lead through adversity. We all knew the timeliness of this textbook was paramount to our profession and the workforce.

My years of advocacy work at the local, regional and national level alongside so many of our co-authors is an absolute professional dream come true. Below is the description of the textbook that I dreamt of having after years of teaching a health policy and advocacy course without a strong textbook addressing advocacy in conjunction with policy work.

We strove to have an affordable textbook that students and working professionals could use to guide their advocacy efforts. Oxford Press was stellar at hearing our mission, allowing us to spotlight everyday advocates (some UWL faculty, staff and alumni), have artwork as the text cover that represents



KFOR

movement, diverse voices, and radical change. They provided support for the authors with a stipend and the copywrites for their research and work.

Textbook description:

Advocacy has become a key part of public health degree programs across the country. Many programs have added policy and advocacy courses into curricula in response to new emphases in accreditation

requirements, yet few public health textbooks comprehensively cover the advocacy skills that health professionals need to effect change.

"Be the Change" is an affordable introductory resource on public health advocacy, policy, and community organizing for both undergraduate and graduate students within the health and social sciences. Using a conversational and reader-friendly style, the authors draw on their experience as diverse advocates and practitioners in the field to synthesize the purpose, strategies, and tactics used in successful advocacy campaigns in public health. In each chapter, they highlight case studies of actual advocacy campaigns alongside concrete strategic recommendations for implementing change at the local, state, and federal levels.

Full of useful stories and advice, "Be the Change" amplifies the important advocacy work happening around the United States, from traditional health organizations to grassroots community activists, and provides readers with the tools and inspiration to put advocacy into practice every day.

-Professor Keely Rees



Buy the book



A CAPITOL EXPERIENCE

Standing on the steps of Capitol Hill is a privilege not to be taken lightly. The freedom to advocate, educate and speak about something that needs to be changed, or create new policies, is one of the significant skill sets of a health education specialist in the public health profession.

National professional health education competencies address advocacy as one of the foundational skills needed and are the key elements of the work performed in the field of public health.

UWL's Department of Public Health and Community Health Education has been engaging students in formal advocacy training since 2004. For 18 years, department faculty have assisted more than 200 students to Washington, D.C., to engage in a two-day advocacy training, ending with state congressional office visits.

The Society for Public Health Education (SOPHE) hosts an annual summit where health education and public health professionals, faculty, and students from up to 30 states attend an intensive two-day training on how advocacy works, the key issues, and an act or bill that are primed to go to a House or Senate sponsorship, committee or vote.

The summit's two main objectives:

 engage public health advocates to share advocacy training, materials and resources. • provide a learning environment for all levels of knowledge and experience.

Fall 2022's theme was "Youth Health Equity: Forging the Path for an Inclusive Future" with five educational tracks:

- · Anti-Racism & Youth Health
- · Youth LGBTQ+, Sexual and Reproductive Health
- Youth Mental Health
- · Misinformation in Youth Health
- · Student Poster Track: Health Advocacy for Youth

The four faculty leaders were: Anders Cedergren, Katie Wagoner, Angela Gelatt (past Providers and Teens Communicating for Health coordinator), and Keely Rees. Together, they mentored 17 students: two La Crosse Central High School teens, two recent alumni, and 13 current public health majors. The group gave three summit presentations.



Professor Keely Rees, Public and Community Health Education

Professor Heather Schenck, Chemistry & Biochemistry, is trying to make organic chemistry easier to understand through a new smartphone app.

ORGANIC CHALLENGES? There's (soon to be) an app for that

rganic chemistry is at or near the top of many "hardest college courses" lists. It's notorious for memorization and spatial complexity, as well as its high failure rate.

Professor Heather Schenck, Chemistry & Biochemistry, is trying to remedy some of these problems by developing a new smartphone app. Schenck says an early challenge for students is learning to draw a six-carbon ring in a perspective called the "chair."

The chair is hard to draw, she explains, because of its tricky formalisms: no horizontal or vertical lines, no carbon above or below another, three sets of parallel lines, and more. When bonds are drawn outward from the chair, the complexity increases so there are a dozen or more correct perspectives on a single molecule. Even worse, the chair is a flexible structure so most of these molecules have two different chair shapes, which interconvert and can differ in stability. Students may need to be able to draw both forms and assess their relative stabilities.

Schenck says these issues compound to make an intractable learning problem – when a student tries to check the chair structure they drew against their Solutions Manual, at best they have a 1-in-12 chance of picking the same perspective that the author did. In this chemical catch-22, the student must know that their drawing is correct (and be able to recognize all other views of the structure) to be able to effectively check it. The figure below shows three correct, equivalent views of a single chair.

Schenck is working to address the problem with the EasyChair app. The app, which will enable students to check their drawings and compare images, gives students a drawing tutor on their phone instead of simply offering them a fixed drawing to compare to that often doesn't match the authors.

"EasyChair has the potential to reduce an early pain point in a challenging course for pre-health, chemistry and biochemistry majors," Schenck explains. "It holds promise to motivate and engage students, so they are able to recognize and learn from any of their mistakes." Having taught organic chemistry for 16 years, Schenck knows it is hard in any language. That's why EasyChair is being designed with minimal text, making it accessible to all learners.

Most organic chemistry professors still give paper exams and require students to draw chairs by hand. Existing educational software for organic chemistry offers videos and animations of chair structure movements, or chair templates with pre-set bond locations. Such programs are attractive gee-whiz technology, but their ability to help students learn to effectively draw their own chairs is debatable.

"EasyChair will be the first interactive program that can provide feedback on a student's hand-drawn structure," notes Schenck.

The EasyChair app was one of three finalists for prototype development from a field of over 30 semi-finalists in WiSys' APPStart Challenge in spring 2022. The app is under construction and funding to complete it will be sought during 2023. Rollout is targeted for 2024.

HAWAIIAN HIATUS

Students experience science, culture during Hawaii expedition

any dream of a Hawaiian vacation. But for a UWL professor and her students it was more than a dream – and more than a vacation. It was an inspiring opportunity to do research while learning about Hawaiian ecosystems, medicine and culture.

Biology Professor Jennifer Klein and 16 biology students traveled to the big island in May 2022 to do a variety of undergraduate research projects.

The student teams assembled in February to begin designing their research proposals. They focused on topics that emerged from their own curiosity about Hawaiian ecosystems, the impacts of humans on the ocean environment, the use of plants in traditional Hawaiian medicine, and the converging of modern healthcare and traditional healing.

During the trip, students did research in Volcanoes National Park, the Hawaii Tropical Bioreserve, and beaches at multiple Hawaii state parks. Plant specimens, medicinal herbs and ocean microplastic samples were collected and then analyzed by returning students in ongoing research.

Klein says the expedition was designed to mimic course-embedded undergraduate research, a strategy used to engage entire groups of students in mentored research experiences.

"Undergraduate research experiences are invaluable for building skillsets and developing aptitudes required for sciencerelated careers," she explains.

Klein says COVID had prevented students from pursuing research in faculty labs. She says most seniors who went on



Not only did students experience the scientific process firsthand, but they grasped knowledge of a new environment and culture. Prior to the trip, none of the students had eaten the legendary Hawaiian noni fruit.

the expedition participated to experience authentic, independent research for the first time.

"For many students, a major takeaway was simply being able to develop and pursue their own project," she says.

Not only did students experience the scientific process firsthand, but they also grasped a new environment and culture. One senior says the experience of Hawaii apart from the science was critical.

"Interacting with a variety of locals at farmer's markets and around Kona gave me some insight into local Hawaiian culture," says Tristan Pittman. "Listening to locals playing music, jamming with them, and speaking with them between songs also showed me some contrast between the Hawaiian mindset toward music and that of mainland culture."

Another student said she benefitted from meeting new people who shared their personal and career stories. "Hearing others' stories about how they got to where they are and how they have adapted over the years really put my wants and needs into perspective," says senior Madelyn Kruser. "Coming into this experience, I was unsure about what I wanted to do post-college. But now I have realized that there is more out there for me that I would enjoy and be willing to pursue."

The students also improved their sense of self-efficacy, confidence and selfreliance – areas of personal growth rarely experienced in a traditional classroom, but ones that easily occur abroad.

Klein says many students had never navigated airline travel, swam or snorkeled in the ocean, or hiked across the crater of a volcano or in a rainforest. None had eaten the legendary Hawaiian noni fruit until their visit.

"With encouragement and support from those around them, everyone was able to adopt the right amount of challenge to experience growth," she says. UWL student Travis Key, left, and UWL Professor Colin Belby prepare to fly a drone over a two-mile stretch of Plum Creek in rural Crawford County. The team is using drone imagery, soil samples and geographic information to help the Mississippi Valley Conservancy restore the area to its natural state.

RIVERREVIVAL Creek restoration a win-win for conservation efforts, experiential learning

two-mile stretch of Plum Creek in rural Crawford County is being transported 170 years into the past, thanks to a UWL research team.

Junior Travis Key and faculty mentors Colin Belby and John Kelly are using drone imagery, soil samples and geographic information system software to determine how the creek and surrounding countryside have changed since European-American settlement in the 1850s.

The Mississippi Valley Conservancy, which recently acquired the 1,600-acre property

near Wauzeka, will use the information to restore the landscape to its natural state.

"Over the years, farming practices led to more and more sediment building up along the creek, which cut the stream off from the floodplain," explains Key, who recently changed his major to geography. "The ultimate goal is for the Mississippi Valley Conservancy to reconnect the river to its floodplain so it will be like it was nearly 200 years ago." On a sunny summer morning, the trio parked their cars along the quiet country road, slung heavy packs over their shoulders and set off along the creek.

They first placed markers at surveyed coordinates on the banks. This allowed the team to create aerial imagery with centimeter-level accuracy, and to match that imagery to historical aerial photos of the property.

Once the creek was properly marked, Belby sent the drone buzzing on an



From left, UWL student Travis Key and UWL professors John Kelly and Colin Belby gather data along a two-mile stretch of Plum Creek in rural Crawford County. For Key, it's a chance to learn from faculty members while gaining hands-on research experience.

automated course about 350 feet above the ground.

Then the team used an auger to drill into the soil and extract a foot's worth of sediment. Additional samples taken deeper in the Earth shed light on how the landscape has evolved.

"We're looking for the point where it transitions from light brown soil to dark, almost black soil," Belby explains. "Dark soil is an indication of higher levels of organic material, which is what you would have had in a pre-European settlement. We don't know how deep we'll have to dig. It could be 10 feet or more."

Once the soil samples and drone photography were completed, the team returned to the lab to document the land's changing geography.

Turning the dial back 170 years, they say, will have a major positive impact on the local ecosystem.

"It will allow the river to breathe a little more and turn some of this land into more permanent wetlands," notes Kelly, who's on the Mississippi Valley Conservancy Board. "You'll end up with a healthier and more complex ecosystem resembling pre-settlement times."

Key says the chance to work in the field alongside Belby and Kelly is a major boost to his college experience. It also underscores UWL's robust undergraduate research offerings.

While geography students at other universities may not experience field work until later in their program, Key was able to get a start on this earlier through the Nick & Yonok Zeller Dean's Distinguished Fellowship in Land Conservation.

UWL's Dean's Distinguished Fellowship program, funded through the UWL Foundation, supports collaborative research between undergraduates and faculty members. Students receive a \$5,000 stipend, along with \$500 to cover travel and equipment costs.

"My original plan was to work at another job," Key says. "Because of the Dean's Distinguished Fellowship and the stipend, I get all these new experiences, and I don't have to work full time."

The Plum Creek Conservation Area is an ideal place to teach and promote conservation.

The property includes over five miles of frontage along the west bank of the Kickapoo River and over two miles along Plum Creek. Nearby, the nearly 2,000-acre Kickapoo Wildlife Area-Wauzeka Unit supports one of the highest concentrations of rare forest-interior breeding birds in southwestern Wisconsin.

The Mississippi Valley Conservancy was able to purchase the property thanks to a sizable gift from an anonymous donor.

Belby and Kelly say it's key for students to get hands-on experience with conservation projects, as they are a critical component to many careers related to geography.

In some cases, UWL student researchers use the same equipment and the same software they'll be expected to use as professionals.

Whatever Key chooses to do with his geography degree, his experience at Plum Creek will leave him well prepared.

"Overall, this has been a great learning experience for me, especially since I'm still early in the program," Key says. "It's a really cool project to be a part of." It is with much sadness that we must say goodbye to worldrenowned mycologist and dear friend, professor of biology, Dr. Tom Volk. Tom gracefully overcame multiple health complications throughout his life, including receiving a heart transplant in May 2006. Tom was forever grateful to the anonymous donor and their family, educating others about the importance of organ donation, including giving a TEDx Talk about his experiences.

Born in Girard, Ohio, Tom earned degrees in botany from Ohio University (B.S.) and UW-Madison (Ph.D.). He served as post-doctoral research mycologist for the USDA Forest Products Lab before joining UWL in 1996. In nearly 27 years at UWL, Tom advised dozens of student researchers in his lab, and taught thousands in the classroom.

A life remembered: Tom Volk (1959-2022)

He was elected president of the Mycological Society of America and received the MSA Weston Award for Excellence in Teaching. He was an exceptionally popular speaker for mushroom clubs throughout the country and was honored with the North American Mycological Association's Lifetime Contributions to Amateur Mycology award.

His **"Tom Volk's Fungi" website** is popular for Tom's humor and extensive mycology knowledge. Tom also deeply loved marching band music. He volunteered with Blue Stars Drum and Bugle Corps for 14 years, doing what he did best: making friends and spreading kindness.

Tom taught many about the wonderful world of fungi, but also taught compassion and gratitude. Tom was quick with a pun but even quicker with a kind word. One of his catchphrases was "every day is good" and he lived that motto always, even when he was too sick to teach. His legacy lives on in all who knew and loved him.

A memorial was set for Tom's 64th birthday, Jan. 28, 2023. Please visit the Biology Homepage for details and updates, and to share memories.



EUGENIA TUROV IS MOST ACCESSIBLE INSTRUCTOR

ugenia Turov, a teaching professor in the Chemistry & Biochemistry Department, received the Most Accessible Instructor Award from UWL's ACCESS Center in July.

The award is given annually to an instructor, staff member and department that go above and beyond to ensure accessibility on campus. The awards are given in July, which is Disability Pride Month, and provides a chance to commemorate the passage of the Americans with Disabilities Act, recognizing and celebrating people with disabilities of all kinds.

Q & A with Eugenia Turov

Q: How do you promote accessibility and access on campus?

A: I support accessibility and access on campus primarily through supporting students' needs in my classroom. I meet individually with each of my 96 students every semester and work with them to understand how they learn best, what accommodations they need (either through the ACCESS Center or in some additional ways that I can provide), and how I can help them do their best by introducing a variety of study strategies. These meetings build trust between me and my students, which allows them to feel comfortable coming to me when they need additional help and resources, or when they have learning challenges that we can tackle together. I think this helps create a positive learning atmosphere that also allows students to advocate for themselves in future courses and helps them feel empowered as students. In the past, I was also part of IDAC (Individuals with Disabilities Advisory Committee), though this committee was put on hold when the previous director of ACCESS left UWL.

Q: Why is promoting accessibility and access important to you?

A: Promoting accessibility and access for students is very important to me because I believe that when students are admitted to UWL, we make them a promise that we will foster their success. Students with different learning abilities come to UWL not always having had access to the tools they need and deserve to be successful. Students need to feel supported and empowered to use all the available tools so that they can succeed and grow. Since CHM 103 is an introductory course, many students are not aware of what resources are available to them. Since CHM 103 has a reputation for being very challenging, students are often afraid to seek help. I strongly believe it is my job to normalize help-seeking, and to normalize accessibility in our courses because this helps all students be better and learn better. Positive, inclusive, and supportive classroom climates have been shown to dramatically increase positive outcomes for students, and I have witnessed firsthand how much students can excel when given the opportunities and equal access to needed resources.

Q: What does it mean to you to receive this award?

A: It means so much to me to receive this award, especially since I was nominated by a student. Teaching is sometimes a thankless job, so it's affirming and heartwarming to hear that I have had a positive impact on students. It is an excellent reminder that every minute I spend helping students is an investment in their success and that it's always meaningful and time well spent.

NEW FACULTY AND STAFF



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UWL FACULTY PROFILE



35% instructional academic staff



80%

hold a Ph.D. or

terminal degree



Adam Schneider Biology

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FINALEXAM

Delanie Johnson, a senior public health and community health education major, says a Multicultural Student Scholarship was critical to pursue a college degree.

Scholarships opening doors, unlocking futures



"When I first stepped foot on the UWL campus, I knew this was somewhere that I wanted to be," says Johnson, a senior public health and community health education major. "It truly felt like home from the minute I arrived."

But as with many multicultural students, financial demands of attending college present a major hurdle. In fact, Johnson doubts whether she would have been able earn her degree had it not been for a Multicultural Student Scholarship.

The scholarship fund – supported by the Student Affairs and Diversity & Inclusion annual golf outing – has helped dozens over two decades.

Sometimes, scholarships are a deciding factor in whether a student earns a degree, regardless of knowledge or work ethic. Johnson, who grew up in Waukesha, is a model student. She's a Vanguard, volunteers with Gundersen Health System and participates in the McNair Scholars program, which helps students from diverse backgrounds prepare for graduate school.

Despite her passion and abilities, tuition almost prevented Johnson from even enrolling.

"I am so honored to be able to receive this scholarship," says Johnson. "Without it, I honestly don't know if I would have been able to attend school. I am so grateful for them being able to take a chance on me and knowing that others believe in my future."

