

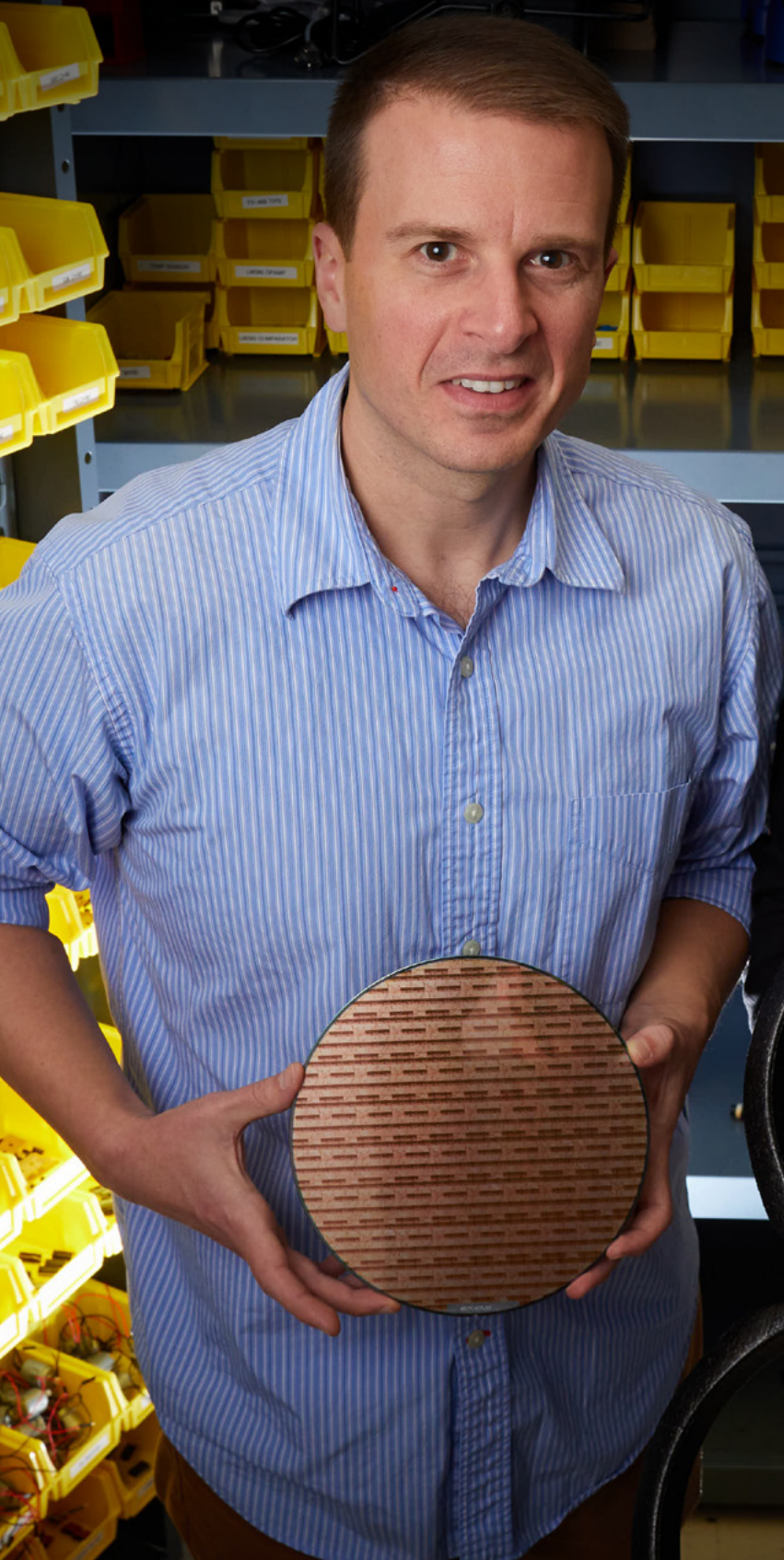


# Science & Health News

VOLUME 17, NUMBER 2, SUMMER 2021

## MAJOR UPGRADE

Computer engineering,  
cybersecurity launched





## in this issue

### 8 | Transformative teacher

Biology Senior Lecturer Renee Redman's teaching style and commitment to students has landed her a 2021 Board of Regents Teaching Excellence Award. Only two instructors from across the UW System receive the annual award.

### 16 | COVID creativity

See how the pandemic called for creativity in class and on the intern site.

### 28 | An adapted distinction

They came to UWL because of its master's in Adapted Physical Education Program. Now two alums have earned the only two national scholarships available to doctoral candidates in physical education.

[uwlax.edu/csh](http://uwlax.edu/csh)

# Science & Health News

UNIVERSITY OF WISCONSIN-LA CROSSE  
COLLEGE OF SCIENCE AND HEALTH  
NEWSLETTER  
SUMMER 2021 VOL. 17, NO. 2

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#### CLASS NOTES POLICY

Update your address and provide a class note for the Lantern at [uwlalumni.org](http://uwlalumni.org).

**ON THE COVER:** Assistant Professor Elliott Forbes, left, described the program's first year as a success, despite challenges presented by COVID-19. He's pictured with one of the other computer engineering faculty members, Assistant Professor Lei Wang.

# NEW MAJOR

## Computer Engineering Program

Assistant Professor of Computer Science Lei Wang is one of three faculty in the Computer Science Department hired as part of the new computer engineering major. Wang is holding a remote controlled flying drone.

*Continued on next page*

UWLAX.EDU/CSH 3

Several years ago, UWL's Computer Science Department faculty saw an opportunity.

They noticed an increasing demand for everyday objects with technology — everything from doorbells to refrigerators — to be connected to the internet.

This phenomenon, called the “internet of things,” inspired the launch of UWL's computer engineering major in fall 2020.

“People may want to be able to lock their front door using their phone, or they may want their refrigerator to remind them to get something from the store,” explains Kenny Hunt, chair of the Computer Science Department. “Because these objects are now accessible to program, and because it's relatively cheap to manufacture and modify this computing hardware, we thought it was a good time to start the program.”

The program launched at a challenging time, with most classes moving online due to COVID-19. The hands-on nature of computer engineering — which, ideally, involves building machines in a lab — made for a difficult transition.

Faculty adapted by providing students with kits they could assemble remotely to gain hands-on experience.

“Engineering is meant to be hands-on. So this spring, I managed to make small take-home parts kits with circuit components that students could use to build digital electronics circuits at home,” says Elliott Forbes, an

assistant professor in the program. “One thing that I really think was tough is that it's important especially for engineering students to work together and build up their own study groups. That's one thing we couldn't do. Next year, I plan to more formally ensure students get to know each other and start to work together in their classes.”

---

“Students who are good with their hands and like putting stuff together and dealing with the physical world... they excel in a program like this.”

— **Kenny Hunt, Chair of the Computer Science Department**

The 63-credit program includes courses on digital logic, software design, computer architecture, systems development, electronics and many others.

Those who complete the program will be qualified for a variety of careers — everything from designing and building

HVAC machines at companies like Trane, to developing Web APIs for performance engines at companies like Google.

“Students who are good with their hands and like putting stuff together and dealing with the physical world ... they excel in a program like this,” Hunt says. “Computer science majors tend to talk in the abstract about bits and things you can't necessarily touch or feel. Hardware folks have a different way of looking at things. They like to be able to say: ‘I built this thing, and here's what it does.’”

Computer engineers have a strong job outlook, with many high-paying positions available across the country.

The outlook for UWL's program is strong as well.

The department recently added two faculty members, Lei Wang and Dipankar Mitra, to join Forbes in the program.

Faculty expect cohorts to grow from the current 12 to 16 students to as many as 20.

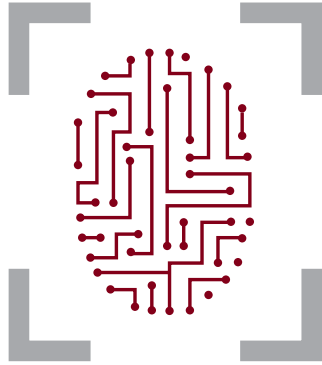
And the department will continue to finetune the program, swapping in new electives and higher-level courses to find what works best.

“The introductory courses we have are solid and well designed,” Hunt notes. “But we're definitely open to trying new things and seeing how students respond.”



W. Michael Petullo, an assistant professor of computer science, says the department's new cybersecurity major emphasis will prepare students for careers in this fast-growing field. "The field is very exciting — the thrill of putting together a technical exploit tends to inspire students to push harder in other areas," Petullo says. "The work provides a fun blend of ingenuity, creativity and technical acumen."

*Continued on next page*



### New emphasis: Cybersecurity

A new major emphasis in UWL's Computer Science bachelor's program will prepare students for careers in the fast-growing field of cybersecurity.

The cybersecurity emphasis, launching fall 2021, will provide students with an understanding of complex computing systems and the skills to develop software that will hold up against security threats.

It will also address a shortage of qualified software developers in both government and private industry.

W. Michael Petullo, an assistant professor of computer science, says the program will be challenging but rewarding.

"Students must navigate all of computer science, and they must be up for the challenge of understanding and doing the difficult programming required," he explains. "Disregarding any portion of computer science leaves your understanding limited, and the people who will attack your systems will turn this to their advantage."

The program requires the same number of credits as the **Computer Science bachelor's program**, but with a few key changes.

Courses in software exploration, fundamentals of information security and secure software development are required. CS356 (software exploration) is a new course that teaches students how to exploit vulnerable software systems using cutting-edge techniques — also known as hacking.

Petullo says that a university is the perfect place for this type of instruction, because it allows students to learn and make mistakes in a lab where no real damage can be done.

While creating the course list, Petullo and others balanced the need to develop specialized skills with the need to instill a strong understanding of the basics.

"Some institutions offer cybersecurity degrees that focus less on the field's technical aspects," Petullo notes. "I think we are in acute need of practitioners who are capable of the hard, technical work behind building better software. Solving the societal problems that result from untrustworthy systems requires a broad understanding of computer science as an underlying foundation to cybersecurity issues."

Those who complete the program will be qualified for positions such as software developer, security engineer and penetration tester.

Petullo says these are rewarding, highly sought-after careers — and not just because they pay well.

"The field is very exciting — the thrill of putting together a technical exploit tends to inspire students to push harder in other areas," he says. "The work provides a fun blend of ingenuity, creativity and technical acumen."

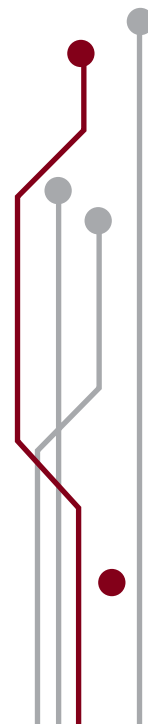
Petullo brings a unique perspective to the program, having served in the U.S. Army for 20 years.

He spent the first half of his career as a communications officer assigned to various units, including deployments to Iraq and Afghanistan.

He taught computer science for four years at the U.S. Military Academy at West Point.

And he finished as the director and lead developer of an Army organization tasked with writing software for cybersecurity operations.

Now, he'll use those lessons to enrich student experiences at UWL.



# RESILIENT RESEARCHERS

## Students adapt their research amid COVID-19

A pair of UW-La Crosse biochemistry students didn't let COVID-19 stand in the way of their research.

Cullen Schull and Nico Lang, both May biochemistry bachelor degree graduates, spent the past couple years researching "greener" routes of synthesis for high-purity curcumin, a powdery orange chemical produced by certain plants. Curcumin, the active ingredient in turmeric, has been used as a cooking ingredient and alternative medicine for centuries but also has biological applications as a "wonder drug."

Lang had been working on the synthesis and isolation of curcumin compounds using a green methodology and microwave energy. Typical industrial synthesis and isolation procedures are based on a report from the 1960s, taking a greater toll on the environment.

Unable to work in the lab due to COVID-19, Lang demonstrated the effectiveness of his greener approach using recently developed software — the Environmental Assessment Tool for Organic Synthesis. He also completed a bibliography on the synthesis of curcumin and similar chemicals, placing his methodology in perspective.

Schull had been working on a study to develop a simple and versatile method to obtain curcuminoids (analogues of curcumin) using a blend of synthetic and computational modeling.

From a biomedical standpoint, curcuminoids are shown to be even more effective than curcumin. However, a lack of knowledge about curcuminoid synthesis has led to limited commercial availability of curcuminoids, as well as high prices.

Schull's synthetic work was put on hold during COVID-19. Instead, he used molecular modeling to better understand the



Nico Lang, '21



Cullen Schull, '21

mechanism of curcuminoid synthesis, gaining valuable data and experience.

This summer, Schull is finishing his project and hoping to publish his manuscript.

His work helped earn a WiSys Spark grant, which was funded for spring and summer 2021.

"It is remarkable that these students felt the substantial impact of COVID-19 on their research but were able to use the online transition as an opportunity to take their research to a new level," says Valeria Stepanova, an assistant professor of chemistry and biochemistry and the students' research advisor.

Lang has been accepted into the University of Utah's graduate chemistry program. Schull plans to pursue a doctorate in organic chemistry at Northwestern University.

*Assistant Professor of Chemistry and Biochemistry Valeria Stepanova works with students in a biochemistry lab in this pre-pandemic photo.*



# TRANSFORMATIVE TEACHER

Biology's Renee Redman receives Board of Regents Teaching Excellence Award



**R**enee Redman's favorite part of her job is watching students grow before her eyes.

Since the senior lecturer teaches lower-level biology to first-year students and upper-level cell biology to juniors and seniors, she's had a front-row seat to many memorable transformations.

"Making a connection with them, watching them grow as critical thinkers, helping them understand a difficult concept and

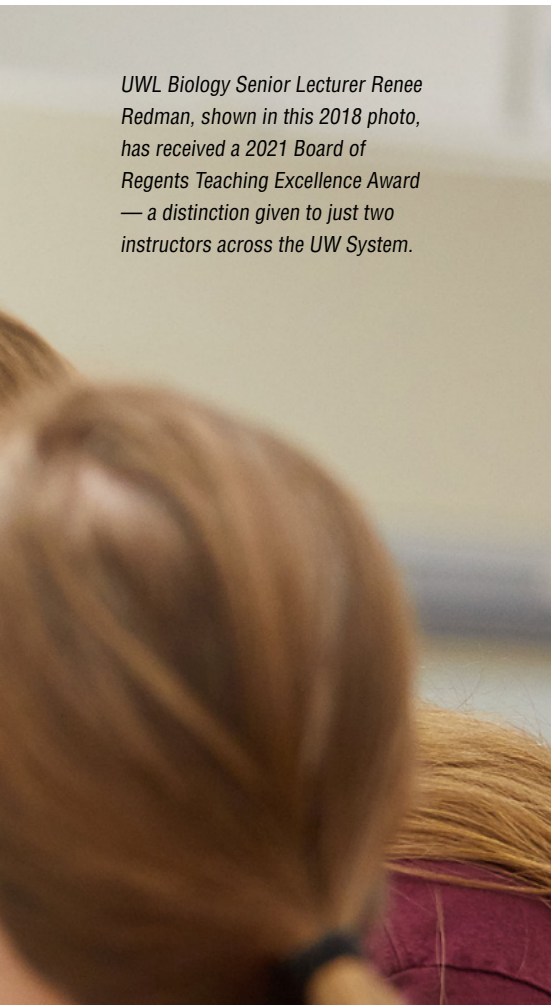
then watching the 'aha moment' when they figure it out is the reason I do this job," says Redman, who's taught at UWL since 2005. "The confidence they have as seniors compared to where they were as first-year students makes me smile. I'm so proud of how hard they work and what they achieve."

Of course, some of that progress can be credited to Redman's teaching style and commitment to students — traits that landed her a 2021 Board of Regents

Teaching Excellence Award. Each year, only two instructors from across the UW System receive this award.

It's a distinction of which Redman is fully deserving, her colleagues say.

"Dr. Redman is a compassionate and dedicated educator who prioritizes student success and academic progress," says CSH Dean Mark Sandheinrich. "She is patient and understanding, and has a knack for developing ways to communicate



*UWL Biology Senior Lecturer Renee Redman, shown in this 2018 photo, has received a 2021 Board of Regents Teaching Excellence Award — a distinction given to just two instructors across the UW System.*

challenging concepts that facilitate student learning. Renee is also a leader in the development and enhancement of the biology curriculum through innovations in course design and delivery. Students and faculty alike see her as a role model of educational excellence.”

Mike Abler, Biology Department chair, says Redman makes every effort to build positive personal connections with her students.

“Dr. Redman has an amazing ability to meet students at their level of understanding and bring them to a higher level, regardless of where they start,” he says. “Each student feels respected and appreciated in her classes. Dr. Redman wants her students to feel she is their advocate, not their adversary.”

Redman has always been interested in biology — cell biology in particular. Often, she says, people focus on the diversity of organisms without noticing the diversity and differentiation of cells.

She earned her bachelor’s degree in marine biology from the University of North Carolina Wilmington. She went on to receive her doctorate in cell, molecular and structural biology from Northwestern Medical School.

After teaching for eight years at the University of North Carolina Greensboro, Redman and her husband moved to La Crosse, where she soon joined UWL’s Biology Department.

She has taught an array of courses at both the lower and upper levels, including General Biology, Cell Biology, Biology for the Informed Citizen, anatomy and physiology labs, and First-Year Seminar.

Redman never gets bored with her specialty area because there is always something to learn.

“Cell biology (in particular) is a constantly changing field,” she says. “We learn more

every year about cell structure and function, signaling pathways and how cells work.”

Redman notes that teaching during COVID-19 has presented many new challenges, including limited technology and the unique needs of students.

To accommodate as many students as possible, she began posting more supplemental materials on Canvas, UWL’s online learning management system. Redman has also created videos on the most challenging topics, and made herself more available to students outside class.

“I think flexibility has been the most important adjustment over the past year,” she explains. “I definitely am looking forward to just being in the classroom with my students, discussing material and doing peer-based learning activities.”

While seeing her students succeed means more to Redman than any individual accolade, she was thrilled to receive the Board of Regents’ Teaching Excellence Award.

Much of the credit, she adds, should go to her colleagues in the Biology Department.

“I was so very honored to be nominated (for the award) by UWL,” she says. “And now, to have been given the award by the Regents committee, I still find it hard to believe. I work with such dedicated, creative and phenomenal teachers ... and I do believe this is a reflection of the work that is done in my department and at UWL.”

# ‘Fit to Lead’

## PT supports Eagle Battalion in pursuing health, wellness



*Faculty member Dr. Hanni Cowley, who has expertise in sports medicine and orthopedic physical therapy, is guiding physical therapy graduate students helping ROTC cadets.*

**T**he Physical Therapy Department is helping ROTC cadets get a leg up on the competition — and staying more healthy.

The Eagle Battalion, headquartered at UWL, includes students from UWL, Viterbo, Winona State, and St. Mary's universities. Cadets work to develop skills and leadership traits needed to thrive in today's Army. They also complete rigorous training to prepare for the physical demands of their career.

“We seek to continually develop our fitness so that we can confidently and ably lead our soldiers in austere environments that prove mentally and physically taxing,”

explains Military Science Department Chair Lt. Col. Erik Archer. “An Army leader unable to withstand these stressors is unable to lead.”

As future officers, cadets must also promote the fitness of those under their command. This presents a tremendous challenge since musculoskeletal pain and injuries are common among military personnel.

That's where UWL's Doctor of Physical Therapy (DPT) Program helps. It's the largest graduate program on campus, with an enrollment of over 120 across three

cohorts. DPT students spend two years completing coursework on campus, while their third year is in clinical settings.

During their second year, DPT students begin hands-on experience working with community clients. The courses provide students opportunities to begin applying concepts and techniques they are learning in the classroom.

Realizing the unique needs of the Eagle Battalion cadets and DPT students, faculty from the two programs began discussing collaboration in fall 2019. It quickly became clear that both could benefit.

Out of these discussions, “Fit to Lead” was born. Its primary objective: educate cadets regarding best-practices for injury prevention, self-care, and performance enhancement. In addition, the program provides additional high-impact learning for DPT students.

The first iteration of Fit to Lead began in spring 2020. Second-year DPT students developed and delivered educational sessions to a cohort of Eagle Battalion cadets. Topics ranged from proper exercise technique to self-management of pain following activity.

In addition, DPT students began evaluating and treating injured cadets as part of an integrated clinical education course. Faculty member Dr. Hanni Cowley, who has expertise in sports medicine and orthopedic physical therapy, guided them.

The collaboration found immediate success. Archer saw cadets take the lessons learned and immediately apply them in weekly training, and share the knowledge with underclassmen.

In fact, Fit to Lead is win-win for the students from both programs.

“Working with the ROTC cadets has been a great experience as a student physical therapist,” says Erika Sesing, a second-year DPT student. “We have had the amazing opportunity to help the future of our military meet their goals in the program, while simultaneously improving our own therapy skills.”

ROTC students concur. “Working with the Physical Therapy team over the past few weeks has been the best thing for my body,” says third-year military science student Avery Wellens. “Hanni and her students are always trying to find the best way to help me out while providing a good learning experience. Whether it be new stretches or dry needling, working with them has been the fastest way to feeling better.”

Twenty percent of cadets were evaluated and treated in the program’s first six weeks. DPT students say participation helped to improve their psychomotor skills, clinical decision-making, and overall self-efficacy.

With its initial success, Fit to Lead has continued with new cohorts of cadets and DPT students.

Fit to Lead is a novel collaboration that is an example of two groups that are truly in a symbiotic relationship, says Dr. Thomas Gus Almonroeder. Both mutually benefit educationally while simultaneously serving each other.

Scholarship opportunities have also developed. Almonroeder was the lead author on a paper based on a study examining how the weight cadets carry in their packs during marching influences joint loading.

In addition, Cowley was selected to present an overview of the Fit to Lead program at the Educational Leadership Conference, a national conference conducted by the American Physical Therapy Association’s Academy of Education.

The scholarly products will help to ensure that Fit to Lead benefits extend beyond UWL’s campus.



- Article by Assistant Professor Thomas “Gus” Almonroeder, Physical Therapy



*“Fit to Lead” brings together students studying physical therapy and those in ROTC. Its primary objective: educate cadets regarding best-practices for injury prevention, self-care, and performance enhancement. In addition, the program provides additional high-impact learning for DPT students.*



# THE TOP 5 OUTDOOR SUMMER ‘MUST-DOS’

**G**etting outdoors is a great way to enjoy summer. There are so many options, particularly in Wisconsin’s Driftless Region. Being asked to pick only a few is a challenge, but Recreation Management and Therapeutic Recreation Department Chair Laurie Harmon accepted that challenge and has five suggestions:

## No. 5 | **Bike (or drive) the Great River Road — allow for plenty of stops!**

With over 250 miles of road along or near the beautiful Mississippi River, see bluffs, wildlife, and more. Get this excellent

**Wisconsin DOT map.** Keep an eye out for bald eagles and their nests (they can be 6’ in diameter and used year after year.) Don’t forget to get a yummy, homemade ice cream cone from one of many shops along the way!

## No. 4 | **Visit the 8,600-acre Kickapoo Valley Reserve (KVR)**

Paddle one of the world’s oldest river systems — and one of the windiest! From the Algonquin language, Kickapoo means “one who goes there, then here” and this river truly meanders in every direction. Note the beautiful Ocooch Mountains, explore

sandstone cliffs, and keep an eye out for extraordinary native plants and animals. Make your first stop the KVR Visitor Center to pick up your pass (or purchase online). Hike, bike, horseback ride, hunt, fish, camp or paddle — but keep an eye out for river conditions and weather alerts.

## No. 3 | **Looking to stay closer to home? Try a DIY project.**

Design, plant and monitor your own “Flutter Garden.” Bring in pollinators by using wildflowers native to the Driftless area. Remember, monarch larvae, in particular,

*With over 250 miles of road along or near the beautiful Mississippi River, travelers along the Great River Road see bluffs, wildlife, beautiful sunsets and much more.*

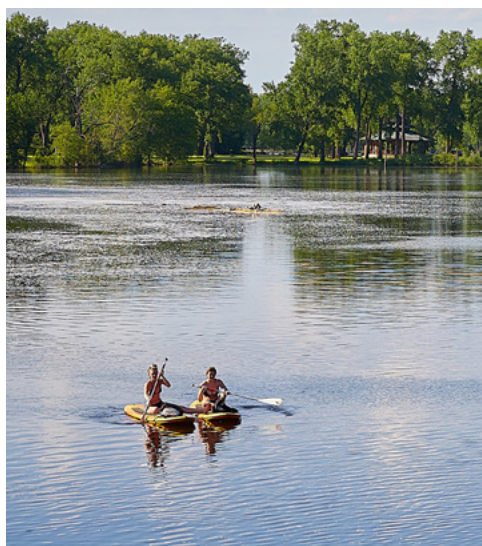
need some kind of milkweed (or butterfly weed) for food and the adults need wildflower pollen. Not sure what's native? Check the DNR.

## No. 2 | Create your own scavenger hunt.

It's an old standby, but with a little ingenuity, you can make it personal and unique. We named ours "No Sit Sunday" – so the kids (and adults!) were ready to move looking for "something furry," "a tree that drops its leaves in winter," or "a bug" (which they had to draw rather than capture by phone camera.)

## No. 1 | An evening under the stars – literally.

We're good at getting outdoors during the day, but often forget the power of evenings. First, find a location with not much ambient light. If in a city, get at least 10-15 minutes out of city lights (less light pollution = more sky surprises). In western Wisconsin, try Goose Island, Perrot State Park, Brice Prairie, Trempealeau National Wildlife Refuges, or the Coulee Experimental State Forest. Bring a cozy blanket and comfy chair, find a spot, snuggle in, and sit back. Most importantly, don't look at any lights (especially your phone). It takes at least 20 minutes for your eyes to fully adjust to the dark. Check out upcoming celestial events (like meteor showers.) Try spotting satellites or the International Space Station. We can see the northern lights in the region — look low on the northern horizon on a clear night!



Homemade ice cream cones are available to travelers in Western Wisconsin. Here, UW-La Crosse students enjoy treats from La Crosse's The Pearl.

Left: Whether it's in Pettibone Park or on one of the Driftless Region's countless waterways, kayaking and other water recreation activities are popular in Western Wisconsin.



- Article by Recreation Management and Therapeutic Recreation Department Chair Laurie Harmon

# FRESHWATER COLLABORATIVE

STATE INITIATIVE WORKS TO TRAIN THE NEXT GENERATION OF WATER PROFESSIONALS

**U**WL is part of a new statewide initiative working to better Wisconsin's water.

The Freshwater Collaborative of Wisconsin (FCW) is a partnership of the state's 13 public universities, connecting with industry, local communities, policymakers and advocacy groups. The mission: train the next generation of water professionals, and establish Wisconsin as a global leader in water-related science, technology and economic growth.

Water is the fastest growing sector of the world's economy. By 2035, it will be worth approximately \$800 billion. According to UNESCO, 78% of all jobs globally are water dependent.

Climate change, increasing urbanization, intensive agricultural and other trends will require more skilled water professionals to innovate and tackle challenging problems.

Wisconsin's unique natural setting makes it the perfect home for the Freshwater Collaborative.

Wisconsin is bordered by one of the world's great river systems and two inland seas. In the heart of the Great Lakes Region it holds 44,000 miles of rivers and streams, over 15,000 lakes, rich and diverse wetlands, and significant groundwater assets.

The goal of the FCW is to build a statewide, interdependent educational programming network to include:

- customizable undergraduate degree programs that allow students to enroll in courses at UW campuses statewide
- certificate programs for deep dives into specific topics, with field opportunities at multiple campuses
- transformative hands-on experiences where students spend a time in the field at campuses around the state as part of their degree

- internships and job opportunities through industry, government and community partners.

UWL and the Driftless Region are uniquely poised to be strong collaborators in the FCW. The only UW System campus next to the Mississippi River, UWL can provide educational and research expertise in large river ecology through its River Studies Center, established in 1972.



- Article by  
CSH Associate  
Dean Roger Haro



*With access to the Mississippi River, it makes sense that UWL will play a key role in the Freshwater Collaborative of Wisconsin. Here, Courtney Baker, '19, heads out on the Mississippi to collect water samples to analyze microplastic content.*



*Geography & Earth Science Professor Colin Belby, second from left, heads out into the area to find real-life examples of classroom lessons like he did with these students in 2019. Belby is the liaison for a new partnership with the Mississippi Valley Conservancy.*

# A sense of place

## New partnership provides student research opportunities in land conservation

**O**n most sunny afternoons, UWL students trek out to hike in the La Crosse Blufflands or on trails along the La Crosse River.

Student attraction to campus arises not only because its stellar reputation in teaching and research — students are drawn because natural surroundings provide a unique sense of place between the bluffs and the river.

This sense of place brings forth a desire to learn about the Driftless Area and its wonders — along with protecting those wonders for future generations. That desire has led many UWL students, staff, faculty and alumni volunteer or become involved in the Mississippi Valley Conservancy (MVC).

The MVC, based in La Crosse, works with regional landowners to protect sensitive landscapes, restore habitat and provide learning opportunities.

Recognizing shared values in community engagement and environmental science, UWL's River Studies Center (RSC) and the MVC formalized a partnership in February.

Its initial objectives include:

- increased UWL undergraduate/graduate internship, research and other experiential learning opportunities with the MVC to assist with their respective missions
- broadened participation of students from underserved populations in environmental service activities

- increased professional interactions between the RSC faculty members and the MVC staff and board.

Both organizations have assigned a liaison to facilitate the collaboration and serve as their primary points of contact. Professor Colin Belby, Geography and Earth Science, serves as RSC's liaison with his counterpart, MVC Stewardship Coordinator and Ecologist Zac Millbrand.

With their first joint venture establishing an area of research for the new Nick & Yonok Zeller Dean's Distinguished Fellowship in Land Conservation, the partnership is off to a great start.

- Article by CSH Associate Dean Roger Haro

**A**ssistant Professor of Biology Jackie Wisinski knew that with continued COVID-19 curriculum complexities, she had an opportunity to change her cell biology course. Instead of a traditional final exam, she offered a final project.

Rather than answering exam questions, students explained a rare disease using information presented in class and through primary literature searches. And they chose the format: posters, brochures, newsletters, websites, narrated PowerPoints, narrated Prezi/animations, or even podcasts.

For students, the assignment was a cure for ongoing COVID tension.

"I liked being able to choose whatever format we wanted," says Haley Flood, a junior from Waukesha majoring in biology.

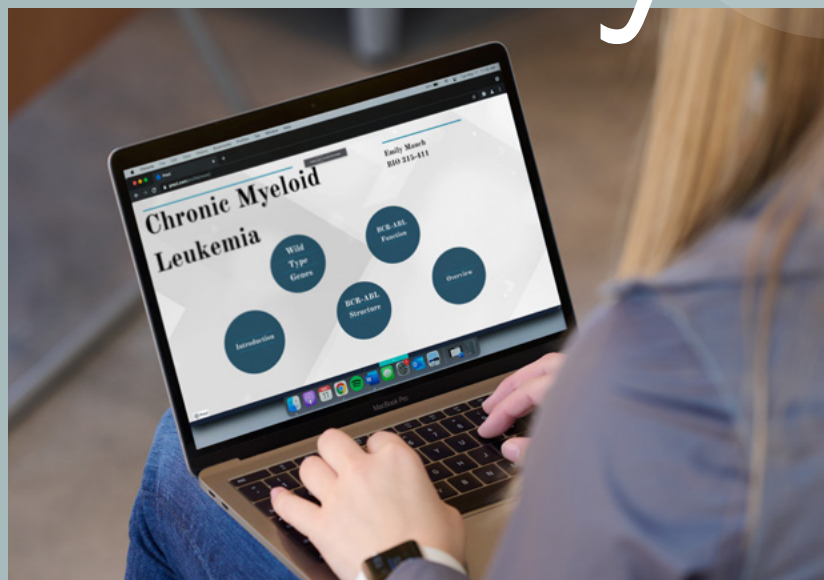
She wanted to make a professional-looking website with information conveyed in an easy-to-read manner. She says it was much better than a final exam because it allowed students to demonstrate their learning in a measured, low stress environment.

"Having an entire semester to plan, develop and deliver a project in a format individually chosen allows a student to creatively share their passion for what they are learning and how they are learning it," she explains.

Flood, who graduates in May 2022, expects the project to be more helpful in her career than another test.

"This project required dedication, extensive outside research, and exceptional time management skills in preparing for a defined deadline," she notes. "Continued utilization of these skills will be essential as I work toward and into my career of occupational therapy because, as a tenet, helping patients gain independence is a long-term goal that requires resilience and dedication as a joint effort from the therapist and patient."

# Cell creativity



**See Emily Mauch's animated presentation:**

*Junior Emily Mauch, a biochemistry major from Maple Grove, Minnesota, expects the final project, instead of an exam, will help her in her career when she graduates in 2022.*

“This project provided me my first opportunity to change with the times. I am now fully confident in my abilities to research and then share information in an online format.”

— Emily Mauch

Maple Grove, Minnesota, junior Emily Mauch agrees the exam alternative was welcome. Three and a half months of studying ending with a two-hour final exam limits students showing what they’ve learned, she argues.

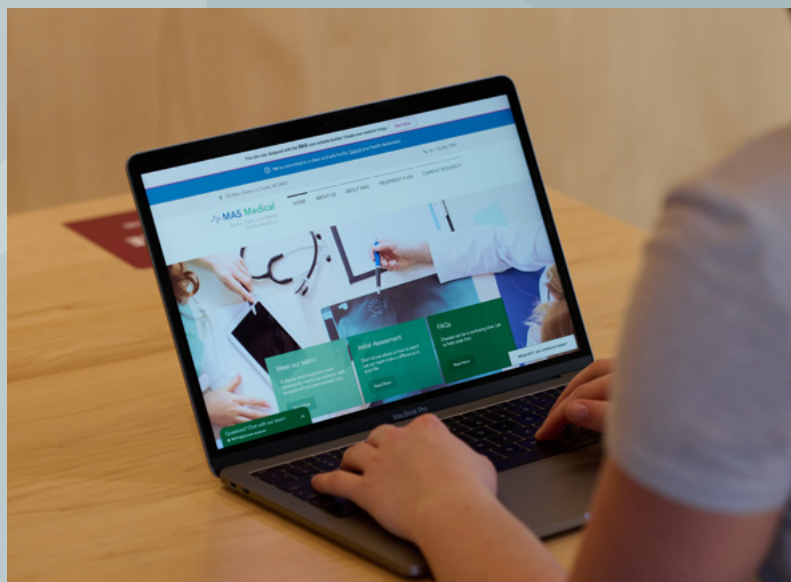
“We were able to show what we learned throughout Cell Biology, as well as applying it to a real-life application,” notes the biochemistry major. “We weren’t being asked multiple-choice questions like ‘what is the tertiary structure of a protein.’ Instead, I was looking at the tertiary structure of an enzymatic protein describing its structure-function relationship to a disease. I don’t know about you, but the second one sounds much cooler to me.”

When she graduates in spring 2022, Mauch knows the final project will help.

“Due to COVID, almost every work environment has been shifted online. With that, new skills and applications needed to be learned,” she explains. “This project provided me my first opportunity to change with the times. I am now fully confident in my abilities to research and then share information in an online format.”

Wisinski was pleased the project over-achieved. “Overall, this project allowed students to take ownership of course content by applying what they learned to a completely new situation that was personally relevant and allowed them to showcase their other skills in a creative way,” she says.

# COVID calls for class changes



See Haley Flood’s website.

Haley Flood, a junior from Waukesha majoring in biology, created a professional-looking website with information conveyed in an easy-to-read manner as her “final.”

# Virtual adventures

## Pandemic provides unique internship

Brittni Jegerlehner figured her internship would be unusual. It was.

The therapeutic recreation major from Sun Prairie interned at Madison's Capitol Lakes Health Center from September-December 2020. She worked on skilled nursing and long-term care floors, providing therapeutic activities and interventions for residents.

With the pandemic, visitation policies were extremely limited and residents couldn't have family visitors. Outdoor visits were offered briefly once a week.

"This was an incredibly difficult adjustment," explains Jegerlehner, who graduated in December after her internship. "To try and combat this transition, our therapeutic recreation team offered a wide variety of video calls for our residents with their family members, but video calls were not always available during times of resident distress, and our recreation team couldn't be everywhere at once. So, I decided to implement a project that would help with this."

Jegerlehner's project — "Virtual Adventures" — allowed residents' family members to upload and send videos. The videos included virtual fun family tours, grandchildren playing, scenic drives through fall colors, or just a kind message.

"Although these videos didn't always offer the opportunity for residents to speak with their loved ones live, being able to see their faces, hear their voices, and see something beyond their four walls was meaningful to them, so it was meaningful to me," Jegerlehner says.

Lecturer Tara DeLong, therapeutic recreation internship coordinator, says Jegerlehner's experience highlighted something discovered during the pandemic: many were isolated and lonely.

"Suddenly the world knows just how important connection is, how important leisure is," explains DeLong. "So much of our connection is afforded to us through

leisure, and her project really brought this shared experience to the residents."

Despite the challenges, Jegerlehner is thankful for being able to spearhead her idea.

"Along with the technical and customer service knowledge I gained during this project, I learned how important socialization is for people of all ages, at all stages of life, and especially those living in long-term care facilities or separated physically from family members," she says.

The internship gave Jegerlehner experience beyond what she ever imagined.

"Moving forward in my career, I'm taking everything I learned at the internship and applying it to all the people I will meet in my future as a (Certified Therapeutic Recreation Specialist) CTRS," she says. "This internship has prepared me to be a kind, capable, empathetic, and prepared professional ready to help meet the needs of all of the people I will serve."

Jegerlehner recently passed the CTRS exam and will pursue additional certification in child life following another internship this year. She will attend the University of Minnesota to pursue a master's in applied child and adolescent development.

Jegerlehner says campus experiences and memories, particularly faculty and staff, are invaluable.

"You taught me more than I could have ever imagined and I am blessed to have learned from the best there is," she says. "From the bottom of my heart, thank you."



During her internship at Madison's Capitol Lakes Health Center in fall 2020, Brittni Jegerlehner and the rest of the therapeutic recreation team dressed up for a Halloween party.

# CHANGING PE

New teaching program  
reduces time-to-degree

**C**hanges are coming to those planning to become teachers in physical and health education.

UWL's Physical Education Teaching Program has a rich history of training outstanding physical educators including National Teachers of the Year. Among them: Karen Petermann, '87, (2017), Penny Kroening, '85 (2016), Patty Kestell, '90, (2013) and MacKenzie Mushel, '05, (2014).

Building on this tradition requires a retrospective nod to the visionaries who laid the program's foundation, combined with a futures-oriented, contextually-responsive focus.

To respond to evolving physical, cognitive, and social and emotional needs of children, the Physical Education Teaching Program has undergone a revitalization effective fall 2021, becoming the Physical, Adapted and School Health Education Program (PASHE).

Undergraduate students admitted into PASHE will be licensed, and prepared to teach, in physical education, adapted physical education and school health education. Previously, physical education and school health education were individual majors, with adapted physical education an optional minor. To become licensed in all three, time required to complete an undergraduate education often exceeded five-and-a-half years.

To secure timely licensure in all three areas, the combined faculty and staff worked diligently and meticulously for



*To respond to evolving physical, cognitive, and social and emotional needs of children, the Physical Education Teaching Program has undergone a revitalization effective fall 2021. It will become the Physical, Adapted and School Health Education Program (PASHE).*

over 18 months to provide a single major that can be completed in four-and-a-half years. The new program provides greater alignment, integration and collaboration among physical education, school health education and adapted physical education — all while improving a graduate's marketability.

PASHE graduates will continue to be outstanding physical educators equipped with the knowledge and experiences to become future instructors, leaders and advocates for the health of all children in schools.



- Article by Physical, Adapted and School Health Education Program Director Deb Sazama

# PHYSICS DOESN'T HAVE TO BE HARD!

Five strategies every physics teacher should know

**U**WL Associate Professor Jennifer Docktor says a common reaction to explaining she teaches physics is “Oh, you must be really smart,” or “Physics is so hard.”

But physics doesn't need to be difficult — left to those with a rare physical scientific aptitude. If we teach physics with research-backed teaching and learning strategies, Docktor says we can overcome the challenges and improve student learning in high school and college.

Docktor offers strategies to help students excel in physics in her new book *“The Science of Learning Physics: Cognitive Strategies for Improving Instruction,”* with co-author, Jose P. Mestre. She also shared some of those strategies in a video as part of Harvard University's Physics of Living Systems teacher initiative.

## Here are just a few strategies:

**Tip 1: Unravel misconceptions.** Students don't come with a blank slate — they have many ideas about how the world works based on their own observations and experiences. Teachers must uncover and address students' misconceptions



*Associate Professor of Physics Jennifer Docktor is co-author of a new book, “The Science of Learning Physics: Cognitive Strategies for Improving Instruction.”*

inconsistent with what scientists have learned. For instance, many believe that heavier objects fall faster. If you dropped a hammer and a feather, you'd find the hammer does indeed land first. But an experiment with the same two objects on the moon would show they fall at the same rate. Teachers can work to unravel the misconceptions about the physical world by asking students to share their prior knowledge as part of class, says Docktor.

**Tip 2: Teach students to think like a physics pro — practice properly categorizing problems first.** Research shows experienced physicists often approach solving problems by laying important groundwork. They evaluate the physics concepts and principles that apply to the problem first. As they work through the problem, they will then evaluate whether their approach is making sense. Instructors can model and encourage students to use this successful approach too.

**Tip 3: Use active learning techniques.** Active learning in physics means using teaching methods that go beyond lecturing to students while they take notes. Research shows that while students think they learn more from simply hearing the information,



*Teachers participate in a 2017 UWL workshop where they built robots and learned about new ways to incorporate STEM — science, technology, engineering and mathematics concepts — in their classrooms.*

they retain more when they are engaged. In addition to hands-on lab activities, active learning could be any activity where students are cognitively engaged and thinking about what they are learning.

**Tip 4: Understand your own expert blind spots.** When physics instructors become so familiar with physics principles and concepts, it is easy to forget what it was like to be a novice. They may skim through problem solving steps assuming students understand the details. But this could lead to more potential for confusion. Instead, guide students through the initial steps of understanding where to start. Encourage

them to draw a picture and think about concepts and principles involved.

**Tip 5: Teach students study strategies that work.** Many believe highlighting or underlining in their book or notes is effective. (It's actually one of the least effective strategies.) They become more familiar with the material and equate that with having learned the information. Students retain more if they try:

- Practice testing – give opportunities to test through low-stakes quizzes.
- Distributed practice –space learning over a period of time vs. cramming.

- Interleaved practice – combine topics or ideas when practicing physics concepts.
- Elaborative interrogation and self-explanation – encourage students to ask, “why?” and “how does this connect to things I already know?”

## THE MAURICE O. GRAFF DISTINGUISHED ALUMNI AWARD

Recognizes outstanding achievement of alumni who have brought honor and distinction to the university.



# HEALTH HEAD

## Van Bree finds success in an ever-changing field

A colleague remembers sitting in a meeting with new Chief Executive Officer Margaret “Peg” Van Bree and two other vice presidents. Their task: fill three VP vacancies in their hospital.

“We can either play cards or run a hospital,” remarked Van Bree.

With that, they divvied up responsibilities, rallied behind Van Bree and completed short-term goals while keeping long-range plans on track.

“Peg is an exceptional leader, collaborator and mentor,” says former colleague William Brosius.

Van Bree, '82, has taken that leadership throughout the country during her nearly 40-year career in health care. She shared her health expertise as chief executive officer, president and chief operating officer at academic hospitals in Minnesota, Virginia, Wisconsin, Texas and Rhode Island.

Throughout her top administrative positions, Van Bree has maintained adjunct and teaching affiliations. Students not only

benefit from hearing from someone on the front lines, Van Bree does too. Preparing lectures keeps you up-to-date and makes you reflect on your work, she notes.

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### Margaret Van Bree, '82

- Revered health executive, educator; collaborator; mentor.
- Recipient of Exemplary Leadership Award, Ronald McDonald House of Providence; Career Achievement Award, Providence Business News; Houston's 50 Most Influential Women, others.
- Retired president of Rhode Island Hospital and Hasbro Children's Hospital.
- Bachelor's in community health education from UWL; master's in hospital administration, University of Minnesota; doctorate in public health, Tulane University.

(Will accept award in fall 2022)

## TWO OUTSTANDING GRADS FROM CSH

### The Murphy Award for Academic Excellence

recognizes the university's top graduating scholar, as chosen by the Scholarship and Awards Committee.

**Kendra Kreienbrink** graduated with a Bachelor of Science majoring in physics with a biomedical concentration. She has minors in mathematics and chemistry. Kreienbrink was on the Dean's List every semester while maintaining a 3.98 GPA.

She earned numerous awards and scholarships; among them: the Dean's Distinguished Fellowship, the Eagle Apprenticeship Scholarship, the Charles and Lillian Gay Scholarship, the Scott Carnes Memorial Scholarship Fund, and the Physics and Astronomy Honors programs. Kreienbrink plans to attend graduate school for a doctorate in biomaterials for drug delivery or tissue regeneration. She is from Hopkins, Minnesota.



# RESEARCH REVIEWER

Alum providing alternative ways to evaluate research

High impact. World-class.

Phrases like these are often used to describe success in academia. But how much credence should be given to those labels? And, are they just another way to maintain the status quo?

Anna Hatch, who graduated from UWL with a bachelor's in biology and chemistry in 2009, is looking at the ways researchers are recognized and rewarded — and ways that could improve.

Hatch was hired in 2017 to advance practical and robust approaches to research assessment for the Declaration on Research Assessment (DORA). She continues to promote the most effective ways.

Through DORA, Hatch encourages researchers to avoid five common myths about evaluating research. Then, the organization offers design principles to help institutions experiment with and develop better research assessment practices.

Those who work with Hatch appreciate her open-minded approach in valuing alternative perspectives and problem-solving to craft effective solutions.

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### Anna Hatch, '09

- Renowned scientist in biomedical research, science diplomacy and science communication.
- Recipient of the National Science Foundation Graduate Research Fellowship; P.E.O. Scholar Award.
- Currently director for the Declaration on Research Assessment Program at the American Society for Cell Biology in Rockville, Maryland.
- Bachelor's in biology and chemistry from UWL; doctorate in biochemistry, Dartmouth College, Hanover, New Hampshire.

(Will accept award in fall 2022)

### 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.

**Colin Jackson** graduates with a Bachelor of Science, majoring in mathematics and physics. He was on the Dean's List each semester and earned at 4.0 GPA. Jackson received the Eagle

Apprentice Scholarship, the Charles and Lillian Gay Scholarship, the Sentry Insurance Scholarship, and the JD and Marcia Wine Scholarship. He also earned a College of Science and Health grant and department endowment grant for research. Jackson is from Madison, Wisconsin.

# STRONG TRADITION CONTINUES

## Athletic Training now a master's program

**U**WL became the first approved Athletic Training Education Program (ATEP) in Wisconsin in 1981. The program has graduated hundreds who have worked at many levels, from all four major professional sports leagues to college, high school, Olympics, hospital/clinic and others.

The program's rich tradition has been recognized and represented at the local, state, regional, national and international stages throughout its 41 years. It's a premier leader in the field of educating exceptionally skilled clinicians and life-long learners.

A very significant part of its acclaim and success is Mark Gibson, who retired this spring after 36 years of teaching, professionalism, leadership and service. Gibson began in 1985 as head athletic

trainer and ESS instructor. He was elevated to program director in 1993.

Gibson has served in many campus roles, including six years as ESS Department Chair. He has been inducted to the Wisconsin and National Athletic Training Associations' respective hall of fames. Scores of presentations and publications are Gibson's contributions to the profession, among many other accomplishments.

Gibson passes the baton to Cordial Gillette, '99, associate professor in ESS. Gillette returned to campus in 2003 as an AT/ESS instructor.

The transition is magnified because the program graduated its first cohort of graduate students this spring. With substantial change in accreditation standards, ATEP is

now a Master of Science degree, with the undergraduate program phased out.

Gibson and Gillette facilitated the process to assure the new graduate degree will be enhanced beyond its undergraduate predecessor.

The result: UWL Athletic Training is proficiently well positioned as it advances; the tradition of excellence continues.



- Article by  
Exercise and Sport  
Science senior  
lecturer Scott T.  
Doberstein



Left: Associate Professor of Exercise and Sport Science Mark Gibson discusses a procedure on a student during an athletic training class. Gibson retired this spring after 36 years of teaching, professionalism, leadership and service with the Athletic Training Program.

Above: Cordial Gillette, '99, associate professor in ESS, has been named director of the Athletic Training Program.

# SEEDGRANTS

## Program with Mayo funds new research projects

**M**ayo Clinic Health System and UWL have announced recipients of the 2021 Mayo Clinic Health System and UWL Collaborative Seed Grant Program.

The program, in its inaugural year, funds health-focused research projects led by teams of physicians and scientists from both institutions. Seed grants often launch promising new research projects and bring them to the point where they can attract external funding.

The 2021 projects will advance new research at UWL and Mayo in strategic areas, including sports medicine and cancer. These research projects:

- **Develop an AI-based computer diagnosis system for Breast Ultrasound Lesion Assessment:** This study will determine if artificial intelligence can be used as a diagnostic aid to help improve the radiologist's interpretation of breast ultrasound lesions. The goal is to increase the positive biopsy rate for breast cancer, while not missing any cancer. With success, there will be improved outcomes in the accurate determination of benign (not cancer) and malignant (cancer) lesions.  
-Jeffery Baggett and Song Chen, both Mathematics & Statistics, and Dr. Richard Ellis, Mayo.
- **Development and validation of body fat percent prediction equations in male and female high school wrestlers:** Body composition assessment is a key component of the minimal weight certification process in high school wrestling. There are various techniques



*UWL Chancellor Joe Gow, second from right, and Paul Mueller, regional vice president for Mayo Clinic Health System, third from right, talk with UWL students in a Prairie Springs Science Center Lab following the research agreement announcement in November 2019. The two organizations have released the first projects in the Collaborative Seed Grant Program.*

commonly used for body composition assessment in athletes, with each offering advantages and disadvantages. This study aims to improve the accuracy of field-based body composition assessments that can be used to determine the appropriate weight class for wrestlers, including female wrestlers. The study may open the door for future study funding and help establish safety protocols, optimal weight cutting strategies, and improve weight class methods.

-Dr. Andrew Jagim, Mayo, and Joel Luedke, formerly of Athletics.

"These seed grants not only lay the foundation for further research and innovation by both organizations, they represent the collaborative spirit of Mayo Clinic Health System and UWL," says

Dr. Erik St. Louis, Research Chair, Mayo, and Research Coordinating Committee co-chair. "Moreover, researchers, physicians and scientists at both organizations are working collectively to translate new discoveries into care and cure for tomorrow's patients."

"Our students benefit immensely with the hands-on learning opportunities these seed grants provide," adds CSH Dean Mark Sandheinrich. "By having an active role in these research projects today, students gain real-world experience which will be applied in their careers. This will likely lead to the discovery of invaluable health benefits not only for our region, but on a global scale."

See more: [uwlox.edu/news/posts/seed-grants](http://uwlox.edu/news/posts/seed-grants)

# NO. 2 NATIONALLY

Radiation Therapy Program combines classroom, clinical experiences



*Real-life, at-work experience activities offered in the UWL Radiation Therapy Program make it one of the best in the country.*

**A**n extremely nervous and claustrophobic patient. A distracted physician stepping in for a colleague before an initial radiation treatment. Two patients with the same first names in the waiting room anxiously anticipating radiation treatments.

These situations may be just scenarios for UWL radiation therapy students, but being able to think on their feet in similar, real-life situations when they get on the job is critical. And, it's one of the reasons the UWL program has been ranked among the top 15 in the country.

The UWL Radiation Therapy Program is No. 2 on the **Best Value Schools list**. The rankings highlight tuition and enrollment, while listing notables such as UWL's 13-month internship program and its national accreditation.

UWL Clinical Associate Professor Melissa Weege, program director, says the ranking speaks highly of the only Radiation Therapy Program in the UW System — and the state's oldest of only two programs.

"It shows what a great value UWL students and in particular those pursuing the field of radiation therapy get for their tuition dollars," she says.

Weege says graduates have maintained 100% placement within six months of graduation since the program began in 1997. The program, which currently has 42 students, boasts a record of 100% of graduates maintaining a 100% first-time pass rate on the profession's certification exam.

"We are very proud of that," notes Weege. "Our graduates are well educated and trained and enter the workforce with ease."

That's due to excellent instruction, but also the real-life, at-work experience activities offered. The activities prepare students for life in the clinic, says Weege.

"We work very hard to be hands-on and innovative in our approach to education," she explains. "Students complete quality improvement projects for the radiation therapy department where they intern. They also take part in case studies, journal clubs, discussions of treatment approaches at different clinical sites, imaging and patient immobilization labs on campus, program-embedded resiliency curriculum and more."

Weege is especially proud of the program's alumni who stay in touch and mentor current students. The real-life scenario exercises, for instance, came from exercises students experienced while

attending a board review where 2006 alum Matt Taylor worked in San Diego.

Weege says real-life scenarios are key to teaching patient safety and critical thinking. Using high energy radiation to treat cancer has its risks, she notes. And with the increase in technology and imaging as part of treatment, it is imperative students become aware of how easily errors can occur and impact patient safety.



*Clinical Associate Professor Melissa Weege, Radiation Therapy Program Director.*

"These activities are real-life simulations performed on fellow classmates without radiation that have small errors embedded in them for students to catch and avoid," explains Weege. "It helps students to experience how quickly things can be overlooked with many automated processes."

Weege says through the exercises, students discover it is important to pay close attention to detail and work with team members to avoid errors.

Collaboration with alumni continues to expand. Weege says a new internship site opens this summer at Aspirus Wausau Hospital in Wausau, where 2013 alum Victoria Stepan will serve as education director and adjunct faculty member.

# NUCLEAR NAVIGATION

Prof begins new podcast about nuclear science

Physics Professor Shelly Lesher loves to talk about nuclear science. So much, in fact, that her unique approaches were noticed when she was awarded a prestigious Yale Presidential Fellowship at Yale University in 2019-20.

Now she's taking that interest online.

The past five years Lesher has taught a "Navigating Global Nuclear Issues" course at UWL to help students explore how nuclear science has impacted the world — everything from energy and science to art and culture. The 2020 American Physical Society Fellow says there's a void when it comes to nuclear science in society. Often students ask why they weren't taught about it.

"Why are scientists not taught the history of physics or about ethical scientific decision making?" she asks.

Lesher's colleagues suggested she write a book about the issue. But, Lesher says she's not an expert on everything nuclear.

"A podcast allows me to bring in experts to discuss different topics in the interaction of nuclear science and society," she explains.

Lesher's new podcast series — "My Nuclear Life" — explores the intersection of nuclear science and society through interviews with historians, policy makers and others. One of her first episodes includes interviews with Richard Nephew, former principal deputy coordinator for the sanctions policy at the U.S. State

Department and lead sanctions expert for the U.S. negotiating team with Iran on the joint Comprehensive Plan of Action. In another, she interviews Richard Rhodes, Pulitzer Prize-winning author of "The Making of the Atomic Bomb."

Lesher is excited how the series kicked off in December. It's geared toward those in the general public who are interested in history, science or learning something new. Topics covered are varied and have the theme of nuclear science in common.

"One podcasts discusses the start of radium therapy to treat cancer and another the beginning of the environmental movement in the U.S." she notes. "You don't have to be a nuclear scientist to understand these episodes."

Lesher says the onset of COVID-19 actually allowed her to kick off the podcast.

"Travel has been restricted and experts, who are usually traveling presenting talks all over the world, are now working from home and are available on Zoom to talk," she says. "And they are happy to do it. It is a great community."

Lesher is also excited that an undergraduate physics student has been key in producing the series. Lexie Weghorn, who had an interest in physics and society, researches topics and finds guest, and will soon take part in the conversations. Lesher hopes to keep student involvement in the program as part of the podcast in the future.



## LISTEN IN —

Physics Professor Shelly Lesher's new podcast — "My Nuclear Life" — explores the intersection of nuclear science and society through interviews with historians, policy makers and others.



**Access episodes**

**T**hey came to UWL because of its master's in Adapted Physical Education Program. Now both have earned the two national scholarships available to doctoral candidates in physical education.

Katie (White) Holland and Steven Holland, doctoral fellows at Old Dominion University in Norfolk, Virginia, have received the Ruth Abernathy Presidential Scholarship from the Society of Health and Physical Educators America (SHAPE).

The honor, awarded to outstanding students since 1995, provides recipients \$1,750 and a three-year SHAPE America membership.

Katie, who earned a master's in Exercise and Sport Science: Physical Education Teaching Adapted Physical Education Emphasis in 2013, says she was shocked when she — and her husband — received word about receiving the highly competitive award.

"I thought it was a long shot for either of us to receive it," she says. "We were kind of in disbelief when the emails came through that we had each been chosen."

Katie, who earned a bachelor's in physical education and health education from Canisius College in Buffalo, New York, in 2012, attributes her graduate studies at UWL for landing the prestigious scholarship.

# AN ADAPTED DISTINCTION

## Alums earn prestigious national scholarships

*UWL's Adapted Physical Education Program holds programs for area children, like this one in 2018. Hands-on training programs like these for UWL graduate students are key for those learning the discipline. This spring two alums are earning the two national scholarships available to doctoral candidates in physical education.*



Before attending UWL, the West Valley, New York, native didn't plan to pursue a doctorate until working directly with the program director, Professor Garth Tymeson.

"Dr. T planted the seed pretty early on in my master's program and brought it up regularly in the years following," Katie explains. "So it was always in the back of my mind as a potential next step."

Katie says her UWL education made her feel confident while preparing to become an adapted physical education teacher.

"I enjoyed the job and felt like I was good at it," she says. "So moving on to train future teachers felt like something that I could also potentially do well with."

She has enjoyed teaching pre-service teachers while completing her fellowship at Old Dominion University and hopes to find a teaching-focused faculty position.

Steven, too, was surprised when he found out about winning the national scholarship. It was his Old Dominion doctoral advisor who reminded him of a 50-50 shot when applying.

"So, I was happy to hear that it ended with the positive 50%," he says. "In a turbulent year of trying to find an academic position, complete dissertations, and raise a newborn, it was nice to feel like our hard work over the past three years had been recognized."

The Peru, Indiana, native agrees that his UWL degree gave him an advantage.

"Having that teaching background and knowledge allowed me to focus on the research and research questions without additional training and understanding of how to transfer my teaching from youth to college students," he explains.



*Steven Holland*

Steven reiterates mentorship from Tymeson as key, recalling lunch conversations guiding him on the right path.

"He encouraged me to explore higher education as a possibility," Steven recalls. "We talked at length about what that looks like and how to be prepared and essentially created an unwritten three-year teaching plan that ended in my application to my doctorate program."

Steven hopes to contribute to the training and preparation of future adapted physical educators. He fondly recalls his time in La Crosse.

"UWL remains a huge part of who I am and how I do the things that I do," he says. "The program allowed me to work with incredible folks in the local school systems and incredible families that do wonderful things for their children."

Tymeson, who directed UWL's Adapted Physical Education Program many years until retiring in 2019, says the Hollands are two of hundreds of alumni who have excelled since graduating.



*Katie (White) Holland*

"This is a very significant award for doctoral students in our field," explains Tymeson. "And two alumni earning the national honors speaks to the high-quality adapted physical education alumni we are turning out of the program."

In late 2020, the U.S. Department of Education awarded a \$1.25 million grant to UWL to help improve educational services for children with disabilities throughout the country. The Adapted Physical Education Program, along with the university's School Psychology Program, received the five-year grant to help prepare students work in an interdisciplinary special education environment — something necessary when they graduate and begin working in K-12 public schools.

"The grant is providing a unique interdisciplinary graduate experience through a variety of high-quality professional development and hands-on opportunities with students with disabilities," says Brock McMullen, current director of UWL's Adapted Physical Education Teacher Preparation Program.



## PT PROGRAM EMBRACES TELEHEALTH

UWL preparing the next generation of physical therapists for a changing health care landscape

**A**s virtual care becomes increasingly popular during COVID-19, UWL's Exercise Program for Adults with Neurologic Disorders (EXPAND) offered its own virtual rehabilitation sessions this spring.

John Greany, associate professor in the Physical Therapy Program, says the sessions gave students valuable experience with virtual care while ensuring that local clients continued to receive the specialized attention they need.

"Virtual physical therapy and virtual medicine have always been in the background. But over the past year, it's gone from slowly developing in the background

to a point where everyone is doing it," Greany explains. "I think our students are appreciative of the opportunity to experience this in a learning environment, so that when they do enter a clinic environment that is part of a health care system, they'll have the skills to do the job."

EXPAND hosted the sessions in early April, with students logging in from one floor of the Health Science Center and their clients logging in from another. Through video conferencing, the students gave personalized instructions for aerobic exercises, strength training and balance/coordination training.

The students — all second-year graduate students — say it was an informative exercise filled with useful lessons. Without the face-to-face connection, they note, it was a challenge to guide clients through the movements, monitor their breathing and exertion, and generally communicate with them.

"Overall, the telehealth EXPAND session was a valuable experience, and there are many positive takeaways from participating," explains student Zach Mancl, who says it was difficult to monitor how hard his client was pushing during certain movements. "I remedied this by

*Far left: Associate Professor John Greany*

*Left: Associate Professor John Greany watches his students provide virtual rehabilitation services to local community members — part of UWL's Exercise Program for Adults with Neurologic Disorders. The assignment gave students firsthand experience in telehealth.*

consistently asking my client to rate the intensity level and compare the intensity of each exercise to when those exercises were completed in person.”

Added student Melissa Klaeser: “While I do believe that face-to-face physical therapy is far more beneficial, telehealth sessions are a feasible option when face-to-face is not an option. It is certainly a challenge to effectively communicate how to perform exercises, but it can be done, and it will be a great way to improve access to health care for so many people.”

Telehealth is not only more convenient for clients with mobility issues — it is also cheaper and more accessible.

For instance, someone who lives an hour from their physical therapist may have a difficult time making it to a weekly in-person appointment. But logging in is much easier.

These virtual sessions also make students better physical therapists, Greany explains, since they have to approach their instruction in a unique way. Telehealth places a premium on communication, patience and flexibility — skills that will serve students well in all aspects of their career.

And while the identity of EXPAND will always be in face-to-face interactions —



*Through video conferencing, students gave their clients personalized instructions for aerobic exercises, strength training and balance/coordination training. The virtual format placed a premium on communication, patience and flexibility.*

which have continued safely throughout the pandemic — Greany says the program will further explore how students and clients can benefit from this new style of care.

“Our program has a long history of producing wonderful graduates, and it’s because of the face-to-face curriculum,” he says. “My objective is to make sure we’re preparing 21st century physical therapists who can meet the needs of this evolving clinical world, and that means adapting to the times as best we can.”

## About EXPAND

EXPAND brings no-cost supervised physical activity programs to La Crosse area community members with various neurological conditions. Students work one-on-one with each client, under the supervision of a faculty member. The collaborative program includes local medical centers and PT programs at UWL and Western Technical College.

*UWL student Maggie Lombardi reacts during a telehealth session with a resident at Norseland Nursing Home in Westby.*



## A happy project

The pandemic closed doors and dampened spirits. But for a Recreation Management & Therapeutic Recreation class and area nursing home it opened the path for fellowship.

Assistant Professor Jenn Taylor and grad student Alyssa Doughty created a telehealth project to help TR students reach older adults living in nursing and assisted living units — something not allowed during COVID.

The “Happiness Project” helped students telecommunicate with the older residents, and helped residents reach their family virtually.

Taylor’s class put the plan into action in spring. “Our goal was to create a reciprocal relationship that would benefit both the older adult resident through weekly interactions, as well as students looking to gain field experience in telehealth,” explains Taylor. “Simply stated, the project has worked.”

The class collaborated with Westby’s Norseland Nursing Home. In addition it allowed students to

engage with a rural population while residents interacted with young adults.

Students were happy that despite face-to-face fieldwork limitations, they walked away with practices needed in the post-COVID health environment.

Norseland residents gave the project a thumbs up too. “I enjoyed meeting new students and seeing how they have progressed through these visits,” says resident Edith Peterson. “I also got along really well with my student coach and really enjoyed her company.”

Taylor plans to modify the project for next spring’s class.

### Wanna be happy?

Check out **“The Happiness Project”** by Gretchen Rubin. The best-selling book inspired UWL’s Happiness Project.