

Science & Health NEWS



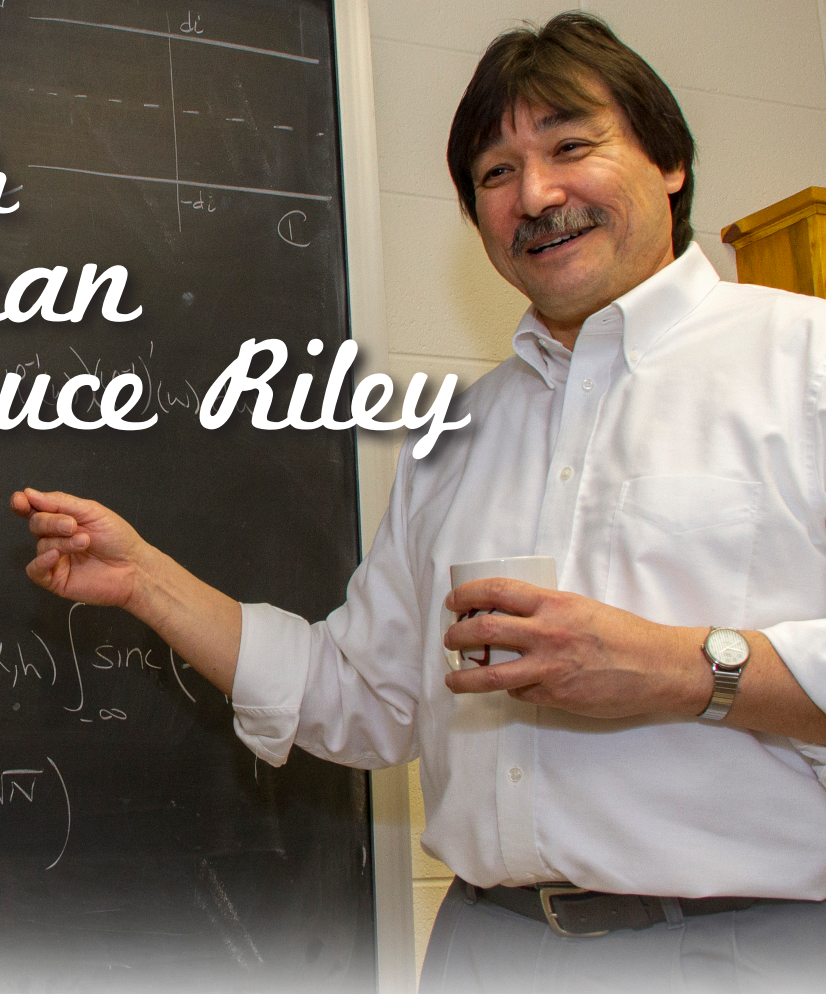
UNIVERSITY OF WISCONSIN-LA CROSSE COLLEGE OF SCIENCE AND HEALTH NEWSLETTER

VOLUME 8, NUMBER 1

WINTER 2012-13

Q&A with Dean Bruce Riley

He still likes his chalkboard, but he embraces iPads too!



Q. You arrived on campus in 1985.

What was it about UW-L that made you decide “this was the place” for you?

A. Of course, my decision to join the faculty at UW-L was based mainly on what I sensed through interactions with members of the Mathematics Department. I sensed a strong academic environment with a core group of faculty dedicated to teaching and scholarship, and good students engaged in their studies as well

as engaged in the university community. I have to admit that coming out of graduate school I was too inexperienced to recognize what UW-L had to offer a new faculty member. You see, I first interviewed for and was offered a position at UW-L in 1982, but I turned down the offer and instead accepted a faculty position at a small college, Plymouth State College, in New Hampshire. The college had a reputation for excellent teachers,

small class sizes, and lots of opportunity to teach/high teaching load.

I thought that would be a good place for me. I enjoyed my time at PSC, and I learned a lot about the craft of college teaching from my colleagues. Regarding scholarship, while faculty scholarship was encouragingly talked about, research productivity was not really required at PSC, and this established a certain environment within the college.

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Associate Professor of Mathematics
Jennifer Kosiak's love for teaching adds up to a UW System award.



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Insects drive some buggy. But Assistant Professor of Math Barrett Klein studies, dreams and talks about them all the time.



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Professor Tom Volk brings his heart to class – literally. In an annual lecture to his class, Volk shows his students his old heart in a plastic bag suspended in liquid.



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Geography and Earth Science
Professor Georges Cravins was the first U.S. geographer to visit the department of geography at the University of Havana since the 1960 U.S.-Cuba embargo.

Science & Health NEWS

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CLASS NOTES POLICY
Update your address and provide a class note for the Lantern at www.uwlalumni.org.

TURNING THE PAGE SAH News has a new look

Greetings! After six years of our online newsletter, you will see with this issue we have made some major changes. The cover is different and layout throughout the issue has been updated. In addition, the newsletter is now in magazine format on the Web. We hope you enjoy these changes!

Our first newsletter was in summer 2006. To see an archive of past issues, visit <http://www.uwlax.edu/sah/html/newsletter.htm>

During the first six years of the newsletter, I had the pleasure to work with Professor Rick Mikat of the Exercise and Sports Science Department. I extend a sincere thanks to Rick because without his computer skills, advice and assistance, this newsletter would not have happened.

So what else is new? University Communications Office staff have begun to assist with production of the newsletter. I would like to thank Florence Aliesch, Lynn Holzworth and Brad Quarberg for their leadership as we transition SAH News to a more user-friendly format on the Web.

Finally, if you have suggestions, questions or comments about the newsletter, feel free to contact me at pkwilson@centurytel.net or 608.782.8350.

Happy reading!

Phil Wilson,
Professor Emeritus
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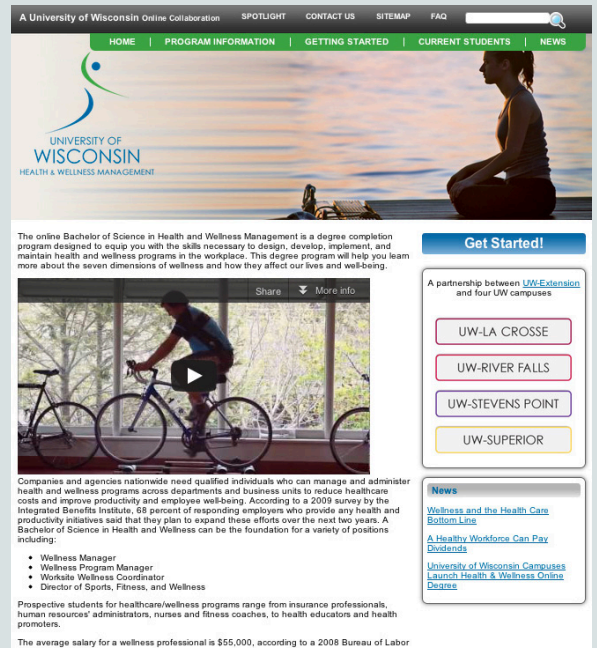
Editor, *College of
Science and Health
News*



Online health and wellness degree available

UW-L participates in offering an online bachelor's degree in health and wellness management. The degree is offered in partnership with UW-Extension, along with UW-River Falls, UW-Stevens Point and UW-Superior.

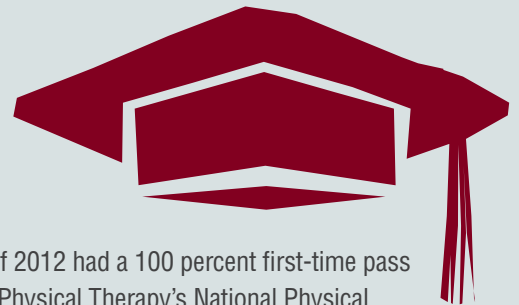
The program is a degree completion program designed to provide skills necessary to design, develop, implement, and maintain health and wellness programs in the workplace. The program is fully accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools.



The screenshot shows the website for the University of Wisconsin Health & Wellness Management program. The header includes navigation links: HOME, PROGRAM INFORMATION, GETTING STARTED, CURRENT STUDENTS, and NEWS. Below the header is a banner image of a person sitting on a beach. The main content area features a video player showing a person on a bicycle. To the right of the video is a 'Get Started!' section with buttons for UW-LA CROSSE, UW-RIVER FALLS, UW-STEVENS POINT, and UW-SUPERIOR. Below this is a 'News' section with links to 'Wellness and the Health Care Bottom Line' and 'A Healthy Workforce Can Pay Dividends'. At the bottom, there is a list of roles: Wellness Manager, Wellness Program Manager, Workplace Wellness Coordinator, and Director of Sports, Fitness, and Wellness. A note at the bottom states: 'The average salary for a wellness professional is \$55,000, according to a 2008 Bureau of Labor Statistics survey.'

Find out more at: <http://hwm.wisconsin.edu/>

PT class of '12 at nation's top on test — again



UW-L's Physical Therapy program class of 2012 had a 100 percent first-time pass rate on the Federation of State Boards of Physical Therapy's National Physical Therapy Exam. UW-L doctor of physical therapy graduates consistently perform above the average of other Wisconsin physical therapy education programs and the national average.

Employment opportunities in the physical therapy field continue to be strong and all UW-L 2012 PT graduates found employment within months of graduation, says UW-L Associate Professor Michele Thorman.

Q&A with Dean Bruce Riley

I could not imagine an academic life that was not a blend of teaching and research/scholarship, and I realized that PSC and I were just not a good match.

As it happened, I ran into Jim Sobota, Tony Barkauskas and David Bange at a mathematics conference in January 1985. They mentioned that UW-L had an open mathematics faculty position and encouraged me to apply for the position. I was fortunate that UW-L gave me a second chance by again offering me a faculty position. This time I grabbed it.

Following my experience at PSC, I could appreciate UW-L's expectations of faculty for quality teaching, research/scholarship and service. These were not only expectations for faculty but, to my way of thinking, were also expectations for the university to support and value faculty activity in all three areas of faculty responsibility... teaching, scholarship and service. These expectations contributed to an academic environment that was consistent with my thoughts on an academic life.

I never regretted first going to Plymouth State College. It was good experience and helped me realize UW-La Crosse was where I wanted to be.

Q. What do you remember of UW-L in the early years that compared to now is most surprising?

A. The most striking/surprising differences would be the campus itself, and the size and composition of the faculty and staff.

In the late 1980s, UW-L had a sleepy/drab state college campus. Over the years,

and especially the last several years, building and renovation projects have transformed the campus into a more attractive university campus, with facilities that support innovative pedagogy, student/faculty interaction and faculty and student research.

Additional major projects are currently underway and/or are in the planning stages for the near future. I'm sure everyone is astonished by the dynamic transformation of the campus that has taken/is taking place during a period of economic challenges.

Over the last several years, the university has created approximately 140 new faculty and 30 new staff positions through the Growth, Quality and Access Program. The GQ&A Program has been amazingly successful and is an excellent example of student engagement/investment in the university; students agreed to increase their tuition by \$1,000 per year to support growing the faculty and staff of the university to enhance the quality of education the university provides to its students.

I understand the university experienced a significant growth spurt from the mid 1960s through the early 1970s. As a consequence, when I arrived on campus in 1985 it seemed that most faculty members were well established in their careers; established in their teaching and scholarly programs; and deeply involved in faculty governance on campus. As a young faculty member, the situation was a wonderful educational experience for me. I learned what it means to be a faculty member just by watching and interacting with my more senior colleagues as they carried out their

faculty responsibilities.

Today, of the approximately 270 full-time faculty and staff positions in the College of Science and Health, over 70 faculty/staff members joined the college from fall 2009 through fall 2012.

The college is searching to fill nearly 30 positions by fall 2013. I suspect the proportion of early career faculty and staff members at the university is among the highest in the history of the university. The talented, ambitious new faculty and staff certainly bring an excitement to campus. We are fortunate to have excellent, established faculty and staff members to serve as role models for their newer colleagues.

Q. The College of Education, Exercise Science, Health & Recreation (EESHR) was eliminated in 2005. You were the chair of the Faculty Senate at the time. This was a very difficult time with the formation of the College of Science and Health, and the movement of "health, physical education and recreation" to that college. In reflection, what are your thoughts on that period?

A. There have been a few reorganizations of the university since I arrived on campus in 1985, but you are correct. The elimination of EESHR with the reconfiguration of SAH (and GLS, education moved to CLS), was a striking change and a difficult time period for the university. I don't often think back on this reorganization, I prefer to look forward, but since you asked —

In 2004-05, the university (and Faculty Senate) was engaged in a large and gener-



Riley in his Graff Main Hall office.

ally positive agenda. For example, there were administrative searches for the Associate Vice Chancellor for Academic Affairs, Assistant Vice Chancellor for Enrollment Management, Dean of EESHR, Director of the School of Education, and Director of Institutional Research. There were task forces working on Instructional Academic Staff and Non-Instructional Academic Staff employment issues, and on academic initiatives in international education.

There was work on Plan 2008 (the UW System diversity initiative), a review/revision of the university's general education program, and work on securing funding for a new academic building. We were introducing electronic submission of grades (this seems like a small thing now, but at the time e-grades were a big deal/concern), and work on addressing and understanding revenue shortages due to not meeting enrollment targets in EM21 (the university's enrollment management plan). There was development work on the Consortiumal DPT (with UW-Milwaukee) program and the UW Graduate Consortiumal MBA program, and the university was preparing for a North Central Accreditation visit in 2006.

Then the state's 2005-07 biennial budget

called for reduction in UWS administrative costs. While the intent was for reduction of administrative costs at the system level, disproportionate reductions were pushed out to campuses. Chancellor Doug Hastad submitted to the UW System the EESHR dean and associate deans positions among the administrative positions to be eliminated, followed by a BOR resolution to eliminate the College of EESHR.

These events leading to the elimination of EESHR were done outside UW-La Crosse's policy/procedure for university reorganization, and promoted great anxiety/frustration and anger among faculty and staff. The elimination of EESHR might have made fiscal sense (I don't know since a complete analysis/debate on the issue did not take place), but the elimination of the college did not make academic sense, to my way of thinking.

Faculty and staff under the leadership of first Dean Michael Nelson and then Interim Dean Karen McLean undertook the challenging task of transforming the College of Science and Allied Health into the College of Science and Health with three additional academic departments: ESS, HEHP and

Who is Dean Riley?

Since Bruce Riley's father was in the Army the family moved often when he was a child. His dad was last stationed and retired at Fort Lewis, Wash. Riley went to junior and high school in Parkland, Wash., where his parents still live.

Riley received his B.S. in mathematics from Pacific Lutheran University in 1976. In 1978 he received his M.S. in mathematics and in 1982 his Ph.D. in mathematics, both from Montana State University.

Riley was an assistant professor in mathematics at Plymouth (N.H.) State College from 1982-85. He joined the UW-L Mathematics Department as an assistant professor in 1985. Riley became an associate professor in 1990 and a professor in 1993. He was named SAH Interim Dean in 2009 and permanent Dean in 2012.

RTMTR. When I came over to the college office as interim dean in fall 2009, my goal was to support the faculty and staff's good work in building SAH.

I think SAH continues to grow into a more cohesive college. College members are cultivating interdisciplinary connections and collaborations, benefiting both educational and scholarly programs in the college.

The college offers excellent academic programs that attract strong students to the university. For example, some of the best allied health programs in the country are offered at UW-L, and the programs attract a large number of talented students to the university.

While some of these students do indeed continue on into an allied health field, many more are converted into science, mathematics, exercise science, health and recreation. These conversions naturally follow from the students' positive experiences and interactions with SAH faculty inside and outside classrooms and teaching/research laboratories. Departments have developed/revised their programs to meet the needs of students, as well as the needs of the state of Wisconsin and society in general.

As a community and as individuals, SAH people care about the development of our students and of each other. There are high expectations for achievement, manifested in the ways individuals are able to achieve even beyond their initial ambitions. This achievement comes from the way our faculty and staff engage as teacher-scholars and mentors. It is a privilege for me to serve as Dean of SAH.

Q. What's next? What can we anticipate and hope for in the College of Science and Health in the next five years?

A. Well, UW-L is hosting a big event, NCUR 2013, in April. The conference will provide a venue for more than 3,000 students, including approximately 200 UW-L students, to present the results of research projects they and their faculty mentors have conducted.

"I am not good at predicting innovation in teaching and learning; remember, I still like to lecture in front of a chalkboard, and I come from a time when changing from filling-in a "bubble grade sheet" with a No. 2 pencil to electronic grade submission was a big technological advancement. However, I proudly observe and learn from my smart and talented colleagues as they develop and incorporate the newest ideas and the most up-to-date methods for teaching."

—Dean Bruce Riley

The university first hosted the National Conference on Undergraduate Research in 2009, and being asked to host the conference a second time in such a short period of time is a mark of distinction for the university. Like faculty research, high quality student research will always be a priority in the college.

Improvement of facilities will continue. For example, this spring and summer building renovations will be undertaken to expand the Murphy Learning Center to accommodate increased mathematics and science tutoring needs, create a science education laboratory in Cowley Hall, and construct long needed research/teaching laboratories in Mitchell Hall.

In the next biennium, it is hoped a UW System proposal will receive funding to support significant additional renovation work within Mitchell Hall to improve and create new teaching and research spaces.

It is well known that the construction of a new state-of-the art Cowley Hall/science building is UW-L's next capital project priority. Depending on state funding, design and construction of an \$80 million Phase 1 would occur from September 2013 through summer 2015, followed by a \$55 million Phase 2.

Recruitment of faculty and staff will always be a major activity in the college. I remember years ago, as I began my service as Chair of the Mathematics Department, then Biology Professor Tom Clafin commented that we should always hire people smarter than

ourselves. I have followed this simple plan, and just a few days ago Tom and I were talking about how well the plan has been working.

The college's outstanding academic programs and current faculty and staff, help attract excellent new colleagues; new colleagues meeting departmental/collegiate needs, including scholarly collaboration within departments, as well as increasing the potential for scholarly collaboration across departmental lines.

College curricula will evolve as it always does. I expect that the mathematics and science education programs will play a larger role among the array of programs offered in the college and, while I don't expect much growth in graduate education, more support for graduate programs is needed.

I am not good at predicting innovation in teaching and learning; remember, I still like to lecture in front of a chalkboard, and I come from a time when changing from filling-in a "bubble grade sheet" with a No. 2 pencil to electronic grade submission was a big technological advancement. However, I proudly observe and learn from my smart and talented colleagues as they develop and incorporate the newest ideas and the most up-to-date methods for teaching.

I look forward to the achievements of SAH community members over the next five years, and I will try to be as helpful as I can be.

Enthusiasm + devotion to learning = TEACHING AWARD

UW-L math professor earns UW System award

Associate Professor of Mathematics Jennifer Kosiak has poems to compare and contrast rectangles and rhombi. She has been known to sing in class: “You got to fight for your right to use synthetic division.” She wants to create new ways for her students to unravel the mystery of math.

Her dedication as a teacher and her ability to inspire enthusiasm for math and learning has landed Kosiak the 2012 Regents Teaching Excellence Award. Two teachers from the UW System received the \$5,000 award.

“Her raps were a highlight of the class,” says Julius Starlin, mathematics education teacher candidate. “Dr. Kosiak’s enthusiasm and creative teaching styles helped all students, math majors or not, to find enjoyment in mathematics.”

Kosiak came to UW-L from Montana State University in 2004. There she earned a doctoral degree in mathematics with math education specialization. She didn’t initially intend to study math in college and wasn’t naturally gifted at it.

“One day in a college algebra class, I was looking around the room and I thought: if they can get it, I can get it,” recalls Kosiak. “I forced myself to take the next math class, and the next and the next.”

Kosiak switched from memorizing formulas to developing an understanding of why they worked. She applies that to her teaching.

“I quickly learned I would be expected to provide more than just the ‘right answer’ for Dr. Kosiak,” says Kim Nordlie, ’10, a seventh grade math and science teacher. “Soon I knew that when I came to class, I would be demonstrating multiple strategies to solve problems, communicate why the solution worked, facilitate small group instruction, and create mini-lessons for my classmates.”

Today Kosiak teaches future math educators as well as college algebra through calculus. She is grateful to all of her past students. “It is because of their dedication that I strive to do my best,” she says.

Her students investigate real-world concepts and how mathematics can be used to explain them, such as the time it takes a car to make a complete stop or how to build a handicap accessible playground. She has embraced and demonstrated the most recent trends in technology to enhance learning and refines her professional skills by visiting pre-Kindergarten through 12th grade classrooms to see how today’s students are actually learning.



From left, Mary Heisel, UW-L senior majoring in math education; UW-L Associate Professor of Mathematics Jennifer Kosiak; and Michele Satter, UW-L senior majoring in math education. Both Heisel and Satter had Kosiak as an instructor. “Dr. Kosiak has been one of the most influential and personable instructors I have had at UW-L,” says Heisel. “She is one of the reasons I am so passionate about math education.”

She loves to see students learn and her job is to facilitate that process whether through songs, mathematical models based on real life or unraveling the mystery behind the formulas on the page, she says.

“I don’t want them to see math as a mystery and a bunch of formulas to memorize,” she explains. “There is a beauty in every subject and there is definitely a beauty in mathematics, which every student deserves to see.”

Some of Kosiak’s significant accomplishments:

- Awarded Teacher Educator of the Year by the Student Wisconsin Education Association
- Served on the Wisconsin Mathematics Council since 2007
- Coordinates School of Education Secondary Teacher Education Preparation Program
- Chaired the STEP program committee during the curriculum development and approval process
- Participated in professional development projects focused on fortifying teacher content knowledge to align with Wisconsin mathematics standards

FASTTRACK works to prepare students, future teachers



A relaxing boat cruise was part of the summer FastTrack program.

As part of a UW System Growth Agenda grant, the FastTrack Program was a hybrid summer mathematics enhancement program for incoming freshman. Its goal was to enhance the mathematical skills of incoming freshmen so they could advance into their first college level mathematics course.

The FastTrack Program was developed by the project directors who worked closely with three mathematics teacher education students. Directors included: Maggie McHugh, associate lecturer, Mathematics, and Murphy Learning Center Director; Associate Professor Jennifer Kosiak, Mathematics; and Professor Robert Hoar, Mathematics and Director of the Institute for Innovation in Undergraduate Research and Learning.

A total of 38 students participated in the summer program which consisted of a

“FastTrack is a rewarding experience and very beneficial. Creating the podcasts was helpful for me as a teacher to have experience talking through examples and teaching others. The weekly online office hours then helped students ask me questions about their struggles with some problems, which also allowed me to understand student conceptions and misconceptions.”

— Michele Satter, Mathematics Teacher Education Student

six-week online component, followed by one week of “face-to-face” instruction, prior to the start of the fall semester. Students were selected due to their interest in pursuing a STEM major (Science, Technology, Engineering and Mathematics). During this time, the students not only improved their mathematical understandings but also became more familiar with science and mathematics programs, and faculty and staff.

The program results showed great success in a variety of ways including student achievement and the development of pre-service teachers mathematical content knowledge for teaching. In all, 37 students were able to improve their mathematics placement score to enter college level math and science courses. Many factors contributed to the success of the program, including the work of undergraduate pre-service mathematics education students.

“In developing and implementing the online technologies for FastTrack, I have learned how powerful technology can be in education. Technology should not be used to replace teachers, but to help create a universal design in an attempt to better accommodate students. FastTrack does just that. It gives students the opportunity to learn, but at their own pace, through podcasts, assessments and weekly online office hours.”

— Amanda Johnson, Mathematics Teacher
Education Student

“Creating lessons for online learning in the form of podcasts helped to improve my abilities to deliver content in a clear and concise manner. It was amazing to see how I was able to teach students, regardless of where they live, via these online lessons. It is very clear to me that technology can be a fantastic resource for learning and can aid student progress, when utilized in various ways such as these podcast lessons and our online office hours.”

— Mary Heisel, Mathematics Teacher
Education Student

The program’s success has led to the development of the College Readiness: University of Wisconsin System’s Math MOOC (massive open online course) funded by a Bill and Melinda Gates Foundation grant.

See more at www.uwlax.edu/MathMOOC.

Three School of Education mathematics education students — Amanda Johnson, Mary Heisel and Michele Satter — assisted in the development and implementation of the FastTrack Program. During the 2012 summer session, the future educators created more than 100 mathematical podcasts that were included in the online portion of the course.

The podcasts were used to explain mathematical concepts, ranging from topics in absolute values to linear equations and inequalities. They were put into 12 course modules that included 10-15 digital learning objects. In addition to creating online materials, the three pre-service educators led weekly online office hours for small groups of students, assisting them to gain a deeper understanding of the weekly mathematical material.

By developing and delivering online materials, the three pre-service teachers

recognized the value of understanding practice pedagogies, both in a “face-to-face” and an online environment. In addition, they realized technology can be used as an effective tool for teaching and learning mathematics. But technology does not replace the interaction between teacher and student.

This was evidenced in the realization of how important the synchronous online office hours were to the success of the program. The success of the program in developing the pedagogical content knowledge of these future teachers is best described in their own highlights and evaluation of the program.

— Maggie Lee McHugh, Associate Lecturer, Mathematics Department and Murphy Learning Center Director and Jennifer Kosiak, Associate Professor, Mathematics Department

Both Amanda Johnson and Mary Heisel student taught during the fall semester and intended to graduate in December 2012. They say their work over the summer with FastTrack has helped them understand how to more clearly present mathematics content to high school students. Michele Satter intends to student teach in fall 2013. She plans to take on an even more active role in FastTrack during summer 2013.

Hands-on Lab

Occupational Therapy students embark on unique learning opportunity

The UW-L Occupational Therapy Program has partnered community members with short and long term disabilities to provide an excellent learning experience for all involved. As part of the occupational therapy students' "Adult Clinical Practice" course, students integrate knowledge from previous coursework in a hands-on laboratory experience. The students work with community volunteers to practice the occupational therapy process, with a focus on increasing participation in everyday activities.

Throughout the fall semester students practice collecting data, planning interventions, conducting therapy sessions, evaluating outcomes and documenting progress. As a part of the process the occupational therapy students and their community volunteers collaborate to identify daily activities that are challenging.

Students then analyze the identified daily activities and determine which aspects of these activities can be altered to facilitate daily functioning. They

then have the opportunity to practice their skills in the occupational therapy "activities of daily living" lab in the Health Science Center.

The lab is arranged to simulate a home environment complete with a bedroom, bathroom, kitchen, living room and laundry room. The students provide new ways for the client to do their everyday activities and the community volunteer provides the students with feedback about their therapeutic communication skills.

Concurrently the community volunteers are helping to educate the students about the communication, observation and evaluation skills they will need as clinicians.

— Carly Cappozzo, Occupational Therapy Graduate Program Research Assistant, and Vanesse Jewel, Assistant Clinical Professor of Occupational Therapy.



Occupational Therapy community volunteer Mei, left, was fitted for an anti-spasticity splint that positions her hand in a comfortable position to simultaneously prevent joint contractures and skin breakdown. OT students Meagen Seabul, center, and Allison Wegmann determined which type of splint would best fit Mei's needs and then constructed and fit it specifically for their client.



The Occupational Therapy Adult Clinical Practice Lab has been run for three years and has received positive reviews from community volunteers, the volunteers' caregivers and family members and the students. Here's what past community volunteers have said:

"I got to work with two nice people who understood my needs and desires. You never overworked me, which is very important."

"I enjoyed your smiles, your positive attitude, and your upbeat style really rubs off — it came through the whole process."

"The students were prepared during activities and explained why we were doing activities, what we were doing and what we hope that I would get out of the activity. There never seemed to be an unprepared point in our meetings."

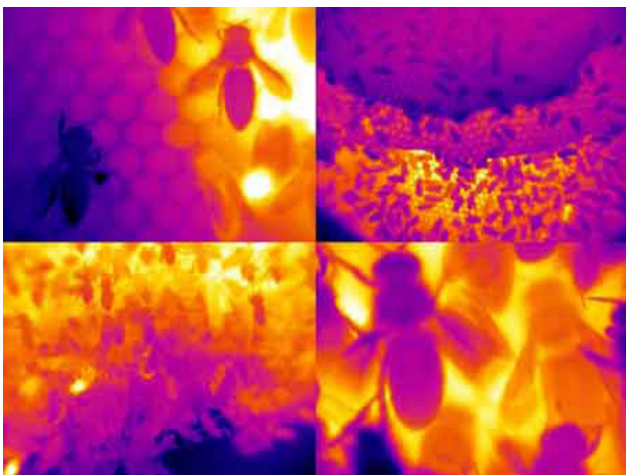
The adult clinic gives the occupational therapy students a more hands-on experience and is a bridge between academic classroom work and fieldwork. Those interested in being a client in the Occupational Therapy Adult Clinical Practice Lab next fall should contact Vanessa Jewell at vjewell@uwlax.edu or 608.785.8462.

OT students Maggie Reynolds, left, and Emily McHugh work with their community volunteer, Dave, to prepare barbeque sandwiches. In addition to providing suggestions and technique to improve meal preparation skills, the students are helping Dave to explore his leisure interests and get more involved in his community. The OT students introduce resources like iPad apps and Nintendo Wii games that allow Dave to participate in activities he loves, sometimes in an adapted way. The Occupational Therapy Adult Clinical Practice Lab helps people maintain a fulfilling quality of life, along with giving future occupational therapy clinicians a valuable "hands-on" experience helping clients to achieve their goals.

THE BUZZ:

professor explores where
insects, dreams and art
intersect

Barrett Klein is a UW-L assistant professor of Biology, animal behaviorist and entomologist. Klein is particularly interested in social insects such as bees, wasps and ants, which exhibit qualities such as parental care and a division of labor.



Thermal images of honey bees taken by Barrett Klein.

Insects drive some people buggy. But that's not the case for Assistant Biology Professor Barrett Klein. He has an obvious love of entomology. If not clear from his office adorned with insect art, it's evident from the ant-patterned neckties he wears to class.

His research focuses on social insects such as bees, wasps and ants and why members of such colonies sleep.

Klein used florescent dye to successfully image the sleeping brain of a honey bee in a colleague's lab at the University of Konstanz, Germany, prior to starting at UW-L in September. He was able to track activity patterns within the olfactory lobes of the brain during sleep and plans to extend that research at UW-L to better understand how sleep might uniquely benefit learning in honey bees.

"Watching a bee's brain while she is asleep is exhilarating ... when it works," says Klein. "After laboriously preparing many subjects, when a lively bee finally falls asleep and her brain has delivered the fluorescent dye to regions of interest and she responds to odors we present to her, this is a time to celebrate — by enthusiastically collecting more data."

Klein's fascination with dream research began with human dreaming. It took a fortuitous turn when he was introduced to the honey bee sleep

research of Walter Kaiser, who is now retired. Connecting the biology with the cultural effects of insects and dreams makes for an especially compelling complement, he says. View his article “The Curious Connection Between Insects and Dreams.”

Klein says researchers can only speculate that bees dream in a way that might harbor interesting parallels with humans.

The hope is that this sleep research will lend insight into future studies on understanding the age-old question of why humans and other organisms sleep. Such basic research may also contribute to greater understanding of human sleep disorders, learning disorders and better functioning of the brain.

His research could also help answer questions about bee behavior and health, which is important at a time when scientists are seeking to understand why bee colonies are declining.

But Klein’s interest in entomology goes deeper than science. He challenges whether there is anything in culture that does not relate back to insects in some way. He pulls out decorative examples from his files: a dress worn by Martha Washington adorned with painted insects, a Tiffany Lamp with a dragonfly design and a grasshopper theme on a particular brand of wallpaper. Insects are even in the juice people drink. Don’t believe him? Check out the last ingredient on the bottle of Ruby Red Grapefruit Juice — carmine or cochineal extract, which contributes to its red color.

All of these collections are examples of another one of Klein’s loves — cultural entomology — the study of insects’ impact on human culture.

He shares a video and photos of the thermal images of honeybees building a comb, heating the brood and communicating by performing

“waggle” dances. The video was one of five finalists in The Scientist magazine’s 2012 Labby Video contest. The video is also a finalist for the International Science & Engineering Visualization Challenge. Vote for it online. While the images contribute to the study of bee behavior, they are also beautiful pictures in vibrant shades of magenta, orange and yellow. The thermal images have been displayed at art exhibits from Maine to Moscow and online.

His artistic ability has also helped with scientific pursuits. From a nearby desk drawer he pulls out a pair of robotic frogs he painted to look identical to real frogs. He plans to use them this summer when he travels to Panama to continue to study the visual and acoustic criteria that frogs use to choose their mates.

At times, behavioral research can ask the impossible of a subject, so faux frogs allow Klein and his colleagues, Ryan Taylor and Joey Stein, to present real female frogs with a variety of visual and acoustic stimuli to see what factors are most attractive when the real female frogs select a mate. Klein et al. just published a

paper that addresses the value of robots when studying animal behavior.

He opens scientific journals to pages with his detailed illustrations of insects from tunneling ants to damsel flies. E.O. Wilson, a biologist considered the world’s leading authority on ants, recently asked Klein for an illustration of a new species of subterranean ant to be published this spring in his next book, “Letters to a Young Scientist.”

“It doesn’t take that much to exploit the esthetic component of science because nature is inherently appealing and exquisite,” he says. “I see a lot of science that is lack luster, unappealing and dry. Appropriate, esthetically-appealing visuals can improve the clarity of the message as well as improve the understanding and appreciation of science.”

Klein teaches courses in general biology, animal biology and a senior capstone course. Stay tuned for courses in animal behavior, entomology and scientific visualization. Learn more about UW-L Biology at www.uwlax.edu/biology.



Barrett Klein’s robotic frogs. The faux frogs, with pneumatically-controlled vocal sacs made of catheters.



Real frog in nature.

PHYSICS DEPARTMENT WINS NATIONAL AWARD



The UW-L Physics Department is one of only four universities nationwide to be recognized for improving undergraduate physics education. UW-L will be awarded the American Physical Society's 2013 Improving Undergraduate Physics Education Award in April at the APS meeting in Denver.

The award goes to outstanding physics programs that support best practices in education at the undergraduate level.

"This award will bring our program, and the university, even more visibility at the national level," says Gubbi Sudhakaran, chair of UW-L's physics department. "It places UW-L alongside institutions like MIT, another 2013 recipient, in terms of the quality of student preparation."

APS was impressed with UW-L's revised physics curriculum at all levels using research-supported methods. UW-L's physics curriculum offers students flexibility and has a number of specialization options. Students have opportunities to work with faculty on research projects in a variety of areas of

physics. And faculty use the latest teaching methods such as active learning techniques, supported by physics education research.

Improvements to UW-L's physics program have resulted in a significant increase in the number of physics majors, bringing this undergraduate program from the brink of elimination to one of the largest physics departments in Wisconsin. UW-L physics has also achieved national recognition for many of the department programs and it has quantifiable results with successful student graduates, notes an APS committee.

Publicity of the award will help UW-L continue to recruit quality students, says Sudhakaran.

The UW-L Department of Physics received a \$287,000 grant from the Wisconsin Department of Public Instruction last January to offer the physical science workshops through August 2013 for teachers in the La Crosse, Tomah and Onalaska school districts. Pictured here teachers in grades 3-10 construct mini rollercoasters in a UW-L science lab with help from university faculty.

PHYSICS DEPT. IS NO. 3 NATIONALLY

The UW-L Physics Department is No. 3 nationally in granting degrees among bachelor's degree-only physics departments. UW-L averaged 23 graduates each year from 2008-10. That's behind only the U.S. Naval Academy (31) and the State University of New York Geneseo (26). It's the second time the UW-L program has been ranked third nationally.

While the UW-L program has averaged 23 graduates, more than 425 undergraduate physics departments in the nation have averaged four or less. "Our higher graduation rate is a direct reflection of the quality of our program," notes Physics Department Chair Gubbi Sudhakaran.

He says undergraduate physics programs recently closed in Texas, Tennessee and Missouri. Programs are threatened in Maine, Florida and Louisiana because of low graduation rates.

2013 improving undergraduate physics education awardees

- Colorado School of Mines
- Kettering University
- UW-La Crosse
- Massachusetts Institute of Technology (MIT)

UW-L PROGRAM, STUDENTS HONORED FOR ADAPTED PHYSICAL EDUCATION INITIATIVES



UW-L student Daniel Yeager, left, is a mentor in UW-L's physical activity mentoring community service program because he wants to help others live life to its full potential. Yeager is working with a Holmen student on football skills.

A UW-La Crosse program in the Department of Exercise and Sport Science has received national recognition for helping persons with disabilities and preparing professionals in the field.

The Adapted Physical Activity Council has given the UW-L Center on Disability Health and Adapted Physical Activity its 2012

Program Recognition Award. The award recognizes the center for enhancing high-quality physical activity opportunities for people with disabilities. The center, established in 1972 as the Special Populations Program, provides health and physical activity services for area people with disabilities, while providing UW-L

students professional development in working adapted physical activity.

The Adapted Physical Activity Council also recognized current UW-L students and alumni working with adapted physical education.

Students Rachel Smith and Ashley Zimmerman received the 2012 Master Student Recognition Award for coordinating UW-L's adapted physical activity mentoring community service program. "They are outstanding academic students in addition to providing leadership, service and inspiration in adapted physical activity," says Professor Garth Tymeson, a faculty member in the UW-L center. Other center professors include Manny Felix, who directs the center, and Pat Dirocco.

Also, 1988 UW-L program graduate Lauren Liebermann,

currently a professor at the State University of New York at Brockport, received the 2012 Professional Recognition Award. Liebermann has published 13 books, more than 80 articles and has received more than \$800,000 in grants in her efforts to promote adapted physical education.

The Adapted Physical Activity Council advocates, promotes and encourages programs, policies, standards, training and research in physical activities for special populations. The awards were given during a conference of the American Association for Physical Activities and Recreation in Boston March 15.

Find out more about the UW-L Center on Disability Health and Adapted Physical Activity at www.uwlax.edu/sah/ess/sape/html/spp.htm.



A group from UW-L went to Boston to receive national recognition for their efforts with adapted physical education initiatives.

THE PROFESSOR WITH *two hearts*

When you first meet UW-La Crosse Professor Tom Volk, you might question his multicolored hair, tattoos or earrings. Given his appearance, you may not consider him to be an internationally recognized mycologist — someone who specializes in the study of mold, mushrooms and fungi. Once you realize that, you may wonder about his motivation to research those dark and murky worlds hidden in forests, underground or in laboratories filled with alien-looking plants.

Little did Volk realize the same fungi he lectured about and researched in labs, would one day be used in the drug keeping him alive today. While living a relatively healthy life until 1997, Volk would undergo a series of life-changing health crises that ultimately transformed him into a “professor with two hearts.” He now teaches his students and the world how fungi impact our world and how a heart transplant transformed his life. This is his dramatic and captivating journey.

When asked about his unique style, Volk will tell you, “I have been through a lot of things.” He says when some students first meet him, they may not immediately relate, but once they do, they learn there’s much more to this professor than merely multicolored hair. Volk says his appearance helps challenge students to “not judge a person by what they look like, but rather what they do or what they have to offer.”

Volk’s long journey began in 1997 when he was diagnosed with Hodgkin’s disease, cancer of the lymph nodes. Fortunately, through radiation treatment, his cancer went into

remission and did not return. However years later, because of radiation treatments, his heart was damaged and became enlarged. Soon his heart required a defibrillator to maintain a normal rhythm. To add to Volk’s heart problems, he contracted a flesh-eating bacteria that ravaged his feet and legs. When he lectures to anatomy classes, he first warns the students he is going to show the grotesque images of his body to make the experience real. After pausing a few seconds, he displays them on a large projection screen in the lecture hall. Some of the students gasp in shock; others look down, unable to comprehend the graphic nature of the images.

As the months passed, Volk eventually survived the flesh-eating bacteria called necrotizing fasciitis. Unfortunately, his heart continued to weaken — the result of the increasing number of shocks to his heart from his defibrillator. Volk tells the students when the defibrillator shocks his heart, “It feels like you are getting kicked in the chest.” It wasn’t long before his doctors at the Mayo Clinic told him that his only option was a heart transplant. He was put on the donor list in January 2006.

Volk’s life would dramatically change with a late evening phone call on May 21, 2006. The person on the phone said, “This is the Mayo Clinic calling. We have a heart for you.” Volk vividly recalls the call. He remembered, “I was immediately terrified” and didn’t expect the call so soon. He did not know what was going to happen next, and things began to happen fast.

Volk’s students picked him up at his home and drove him to the Mayo Clinic, about 90 minutes away. He was prepped for surgery early the next morning. At 6:30 a.m., May 22, he went into surgery, and in about three hours he had a new heart. The next morning he was asked to walk. Two weeks later he was discharged from the hospital with his brand new heart. For several months he stayed at the “Gift of Life Transplant House” in Rochester, Minn., to heal both physically and mentally with other transplant patients.

Volk recalled that he immediately felt better. His face began to take on a pink color, and his blood pressure returned to normal. He remembers that at first it was hard to sleep, thinking that someone had died and he had received his or her heart. For a transplant patient, there are physical and psychology issues they go through.

“I didn’t know how to deal with it,” Volk recalls.

Across his hospital room there was another woman that had received the lungs from the same person Volk received his heart from.

“I felt grateful to that person . . . and very grateful to their family who ultimately had to make the decision to donate these organs,” says Volk.

To commemorate his difficult health journey, Volk decided to get three distinctive tattoos. On his right arm is a color tattoo depicting the underground portion of the morel fungus. It is inscribed with the word *Mykos*, the Greek word for fungus. On his



left arm is a cross section of a mushroom's gill showing how the spores are attached to the mushroom's structure. Sometimes in class he uses his "tattooed arm" to demonstrate the structures of the mushroom to questioning students. As you continue up the same arm there is a tattoo commemorating his heart transplant, dated May 22, 2006. He received this tattoo on the second anniversary of receiving his new heart. Each of the tattoos graphically illustrates the long and difficult journey Volk has traveled.

Volk says there were a number of times he was near death, but was able to overcome the odds. He still takes a wide assortment of drugs to stay alive. One drug he takes daily is Cyclosporine, an immune suppressant drug, which prevents his body from rejecting his new heart. Ironically, this is one of the drugs that comes from fungi, and is discussed and researched in his classes. The drug comes from the fungi *Cordyceps subsessilis*, which can typically be found on an underground beetle of the family Coleoptera — a topic his students have actively researched.

As Volk lectures to various classes at the university, he shows students Xrays, animated EKG's and photos of his transplant journey. His presentations are both captivating and intriguing. Tisha King-Heiden, UW-L assistant professor of Biology, frequently

invites him to speak to her Human Anatomy and Physiology classes.

Professor King-Heiden says, "What Tom does is make science real. What he shows the class is what actually happened to him, and it helps students connect the science to the person."

In the large lecture hall, at the end of the talk, Volk brings his story into sharp focus to the audience. He carries with him a soft, fiber "cozy" adorned with replicas of mushrooms and colored with the dyes of various fungi. Inside lays his old heart in a plastic bag suspended in liquid. As he brings it out of the bag, the eyes of the students are transfixed on Volk's old heart. As few gasps echo throughout the hall from the audience. As Volk's new heart beats with a strong sustained rhythm, his old heart lies in his hands, making the story real and undeniable. As Volk says, "I can hear the gasps from the audience when I bring out my old heart. It really brings it all home — that I had a transplant and this is my heart."

"The first time I held my heart I cried because it was very emotional ... thinking

about the person who died, and whose heart is now in my body."

Volk's hope is to have other people consider the importance of donating their organs for others to receive their "gift of life." Not all transplant hopefuls are as lucky. Some people never live long enough to find an organ match, while others simply don't have sufficient health insurance. Volk's hope is to continue to make the science of human anatomy real and personal by telling his story to the world. He stresses the importance of signing up to be a transplant donor. Volk ends by saying, "I hope students and other people see my story and can relate to it. You can make it through my type of experience." Not only does this professor have two hearts, he has the heart to share his story.

Mediaman is currently finishing a mini-documentary about Tom Volk. To learn more about Tom, his fungi or health blog go to: http://botit.botany.wisc.edu/toms_fungi/

— CNN iReport

CNN PRODUCER NOTE: This story was first published online as a CNN iReport. It is reprinted here with permission from Jim Jorstad, '78, UW-La Crosse Director of Academic Technology Services/ITS. Jorstad produces digital stories as a hobby. He says he wasn't sure what to think when he first saw Professor Tom Volk on campus, with his dyed hair, tattoos and piercings. He later learned that Volk is not only a professor of mycology, but also the survivor of a heart transplant — who keeps his old heart in formaldehyde and shows it to anyone who asks. "The more I learned about the guy, the more fascinated I became with him," he said. The iReporter visited Volk's classroom, shot portraits and interviewed him for about an hour. He is currently working on a video piece. — dsashin, CNN iReport producer

UW-L RESEARCHERS EXPLORE EFFECTS OF MERCURY CONTAMINATION ON FISH, WILDLIFE

In mid May, UW-L student and faculty researchers took their poles and nets to the waters of the Great Lakes region. But the large fish they hauled in weren't for eating. These fish, along with aquatic insects, sediment and other samples from the waters became the subject of months of summer lab research.

Over the last three years, UW-L researchers have measured the level of mercury and other contaminants in fish and other aquatic life in national parks of the Great Lakes region. While they've found low amounts of lead, PCBs and other contaminants, levels of methylmercury continue to be a major concern. The research is one of many ongoing projects related to natural resource issues in the Upper Midwest coordinated by UW-L's River Studies Center.

Mercury pollution has increased considerably in the air and waterways globally since the industrial revolution as a result of fossil fuel combustion, burning waste, mining and other industrial processes. This pollution has spurred research initiatives and subsequent fish consumption advisories across the nation. Some members of the population are particularly vulnerable, such as pregnant women who eat large quantities of mercury-contaminated fish. They risk impacting the development of their fetuses because of mercury's effects on fetal brain tissue and intelligence.

UW-L Professor of Biology Mark Sandheinrich says mercury is not only a concern for humans.

"We have concerns for humans, but our expertise is fish and wildlife," says Sandheinrich, who heads UW-L's River Studies Center. "We are looking at how this mercury in the water is transferred along the aquatic food web and we're looking at the effects of it."

WHAT STUDENTS, FACULTY ARE LEARNING FROM FISH

On a hot July day, five UW-L student researchers are in a cool Cowley Hall basement lab. Immune to the fish odor around them, they pull frozen walleye and bass from a freezer and lay them on a long steel table.

"It's been worse," jokes UW-L student Laura Jacobson regarding the lab's smell.

They are "measuring the fluctuating asymmetry of the fish," she explains. Species in nature tend to have symmetry and, when they don't, that could signal a problem. Students measure the fins and other parts of the fish to see if they are asymmetric and if mercury levels in the fish are related to any asymmetry they might find. They also weigh the fish and use a freeze-drying process to determine the amount of mercury contamination in each specimen.

"In this lab, you learn just how important accuracy is," says Jacobson.

Precision comes in handy for a lot of sciences, says UW-L student Greg Perrine. The senior plans to go to graduate school for forensic science.

"This is big preparation for what I'll do later," he explains. "To take something small and measure it accurately is really important — especially if someone's guilt or innocence is on the line."

Unlike forensic science, UW-L's research won't determine whether someone goes to jail. But it will help researchers better understand how mercury works its way up the food chain and what that might mean for fish and other wildlife. They've found problems typically turn up in reproduction, says Sandheinrich. UW-L students and River Studies Center faculty published some of the first research about the effects of mercury on fish reproduction in 2002 and 2003. That and



UW-L student Laura Jacobson processes a fish as part of a River Studies Center project that explores the effects of contaminants in national parks of the Great Lakes region. Since the 1970s, the River Studies Center has provided research opportunities to nearly 100 graduate students and more than 250 undergraduates.



UW-L student Patrick Schulze enters fish measurements into the computer as UW-L students from left, Yang Liu, Greg Perrine and Laura Jacobson take measurements.

subsequent studies at UW-L have found fish with elevated mercury levels in their system have a decreased ability to reproduce. Studies have also shown loons, who eat large quantities of fish, encounter the same problem.

“We can’t say right now whether mercury has a devastating effect on fish population, but we can say we do see effects on things like hormone production in the fish, the condition of the fish and changes in cell structure,” Sandheinrich.

Why should we be concerned about mercury contamination if it is not necessarily killing fish? Sandheinrich compares it to America’s obesity epidemic.

“Even though the population of obese people is a large percentage of the population, individuals in that population may not be as healthy as they could be and there is a cost associated with that,” he says. “With fish there are economic, cultural and societal costs if humans can’t use those populations to the fullest extent.”

While mercury levels in the Great Lakes region have been on the decline over the past four decades, the levels of mercury still exceed human and ecological risk thresholds in many areas and may be on the rise in some species and locations. The effects of mercury pollution on fish and wildlife occur at lower mercury concentrations than previously reported, according to the 2011

report “Great Lakes Mercury Connections” produced by several organizations, including the River Studies Center.

THE MANY FACETS OF THE UW-L RIVER STUDIES CENTER

Mercury contamination is just one of the many areas of study within UW-L’s River Studies Center. The center, in existence for 40 years, brings together UW-L faculty from various disciplines to investigate natural resource issues in the Upper Midwest — particularly in the rivers, lakes and wetlands.

Other areas of study include invasive species such as silver carp and bighead carp in the Mississippi River, nitrogen cycles in the river basin, vegetation in the flood plain and more.

Since 2000, faculty affiliated with River Studies Center have brought more than \$12.6 million to the university through grants and contracts. Grants come from various organizations. In May the center received a more than \$150,000 from the U.S. Geological Survey for the current fiscal year. That’s in addition to funding from a Cooperative Educational Agreement that UW-L has with the Upper Midwest Environmental Science Center, which has provided more than \$10 million for River Studies Center research since 1996.

And the center is making waves. UW-L researchers have been a key voice at interna-



UW-L student Yang Liu says lab taught him skills such as troubleshooting and teamwork.

tional conferences about mercury pollution that have influenced policy on pollution and more advisories about fish consumption. Reports and other published research findings, including more than a dozen in the last year from the center, have provided more information about mercury pollution to the public.

“The work the River Studies Center is doing is extending well beyond La Crosse and having an effect on policy nationally,” says Sandheinrich.



Professor's research exposes environmental problem in Albania

Ryan Perroy, assistant professor of Geography & Earth Science, pictured collecting a hair sample from a cow in Albania. While attending graduate school at University of California – Santa Barbara, Perroy began his research in Albania as a Fulbright Scholar. He started at UW-L three years ago.

Ryan Perroy's ancestors are from Albania. He studied abroad in the European country as a graduate student. The land is close to his heart. That's part of the reason he is so passionate about his research findings, which show the soil in one of Albania's major cities is heavily contaminated.

In previous studies, Perroy, an assistant professor in the department of Geography & Earth Science, measured dangerously high levels of nickel, chromium, lead, and cadmium in soils around an industrial complex in Elbasan, a city of 100,000 people in central Albania. He traveled back to Europe June 30-July 17 to present his research findings at an international soil science conference in Bari, Italy, and to meet with Albanian government officials, public health researchers and other scientists to continue the research.

A LOOK BACK

When Albania began to industrialize in the 1960s, the country tapped into its large chromium and nickel reserves. Rocks were mined and a large complex was built to process them in just outside the city of Elbasan. Unfortunately, industrial facilities built in this era were not environmentally clean. Located along a river and atop dusty soil, the contamination had great potential to spread.

In the mid-1990s the country's communist dictatorship was overthrown and during a period of political anarchy, the complex became a burnt out shell. People moved into the complex to loot, live, plant crops and graze animals.

It also became a patchwork of small-scale industry, which continues to produce contamination and waste in a way that is unsettling to Perroy.

"In America and much of Europe at least, this is not typically what happens," he explains. "Usually these areas are blocked off, so people cannot be exposed to the contamination on a day-to-day basis."

With smoke billowing into the air and industrial waste being dumped in a nearby river, Perroy decided to put his geography and earth science skills to the test.

SCOPING OUT THE SOIL

Two years ago, Perroy and UW-L undergraduate student Brian Hill, a geography major, spent five weeks in Albania mapping the extent of the soil contamination. That work was supported by a number of UW-L grants, including a faculty development grant, international development grant and an Undergraduate Research & Creativity grant. His soil studies showed "extremely elevated levels" of primarily chromium, nickel and lead contamination in and around the facility, levels hundreds to thousands of times higher than what the U.S. Environmental Protection Agency recommends. Perroy says the contamination could potentially be spreading to people and animals through airborne



Ryan Perroy, assistant professor of Geography & Earth Science, left, presents a map of soil contamination that he created to the Albanian Deputy Minister of the Environment.

dust as well as contaminated plants and animals they eat.

He returned this summer with another UW-L international development grant and departmental support to continue his studies and present his findings thus far at the EuroSoil 2012 scientific conference in Bari, Italy.

He hopes presenting this information to officials will lead the country to look more deeply into what the contamination means for public health.

Perroy continues to examine the extent of the contamination by evaluating hair and nail samples from people and animals within Albania, which he brought back to his lab at UW-L. He also collected food from gardens and water samples, which a research partner, Fatbardh Sallaku, professor and chair of the Agro-Environment and Ecology Department at the Agricultural University of Tirana, Albania, is analyzing.

"Albania is a beautiful and fascinating country, full of generous and welcoming people. The ongoing environmental disaster in Elbasan is an unnecessary shame, and hopefully the results of our work can help begin to change the situation there for the better," says Perroy. "There are opportunities for remediation, but the first step is to figure out what the actual situation is on the ground, which we have now essentially done."

Industrial slag piles that are actively being dumped on the banks (and into) the Shkumbini River, which is used for fishing and irrigation of agricultural fields downstream near Elbasan, Albania.



Marsh lead contamination studies continue with \$60,000 EPA grant



Jake Roberts, UW-L senior, Colin Belby, UW-L assistant professor of geography, and Sara Erickson, UW-L senior, move a raft through the marsh to collect soil samples last summer.

A \$60,000 U.S. Environmental Protection Agency grant will help UW-La Crosse researchers further investigate high levels of lead in the La Crosse River marsh and partner to educate the community about the marsh ecosystem.

Four UW-La Crosse professors — two from Geography & Earth Science and two from Biology — collaborated in writing the grant after initial studies in the La Crosse River marsh over a year ago uncovered high levels of lead contamination in the soil, which could potentially be toxic to wildlife living there.

The grant will allow further analysis of the impact of lead levels in the marsh such as testing the water and life forms living there, including aquatic vegetation, fish, and insects that spend part of their lifecycle in the sediment. Biology Professor Tisha King-Heiden will also study whether the sediments induce any developmental problems with fish.

“Now the question is — is this lead just hanging out in the sediment or is it a greater biological concern?” says Colin Belby, professor of Geography & Earth Science.

The grant also allows researchers to increase public awareness and understanding of the marsh through a series of community meetings and outreach events. Two or more public meetings will be held at the EcoPark in fall 2013 to discuss the results of the marsh lead level studies. UW-L professors are also collaborating to offer a “Marsh Science Day” in summer 2013 to educate the public about the marsh and its ecosystem. Exact dates for these events have yet to be determined.

Professors also plan to create signage in the marsh to educate about its history. La Crosse Gun Club trapshooting competitions at the marsh from 1932 to 1963 left behind lead shot, which sank into the muddy waters, explaining today’s high levels.

The two-year grant began this July and will be complete by summer 2014 and involves a partnership with the City of La Crosse, the Wisconsin Department of Natural Resources and the Myrick-Hixon EcoPark. The four UW-L professors involved are Colin Belby and Ryan Perroy, both Geography & Earth Science; and Tisha King-Heiden and Gretchen Gerrish, both Biology.

BACKGROUND ON THE GRANT

The Environmental Protection Agency has selected 46 organizations in 32 states and Puerto Rico to receive grants ranging from \$30,280 to \$60,000, totaling \$2.7 million for projects that will contribute to improving water quality and community revitalization. The goal of these Urban Waters Small Grants is to fund research, studies, training and demonstration projects that will advance the restoration of urban waters by improving water quality through activities that also support community revitalization and other local priorities. More at www.epa.gov/urbanwaters/funding.

Assistant to the Dean loves problem-solving for students

Carla Burkhardt, '86 & '93, remembers the help she received from the assistant to the dean when she transferred to UW-La Crosse in the mid-'80s. She never thought she would one day advise students in a similar role.

"When I met with Lois Wirkus as a transfer student, I never dreamed I'd be working alongside of her 10 years later," says Burkhardt.

But that's what she's been doing since her graduate assistantship in the Records and Registration Office in 1990-91. Burkhardt has served as an academic adviser in the College of Education; College of Arts, Letters and Sciences; Alliance for Human Development Programs; and College of Liberal Studies. Since 1998 she's been academic assistant to the dean in the College of Science and Health.

Most importantly, she's been helping students meander through the challenges of completing degree requirements.

"I'm proud of how we try to help students get to the bottom of a problem and are honest with them about challenges they may be facing," she says.

Her "to-do" list with students includes:

- informing prospective students about UW-L programs
- explaining requirements and recommending coursework

- referring to appropriate faculty and staff
- enforcing academic policies
- processing students' graduation. ("That's my favorite," she notes.)

Each task includes behind-the-scenes collaboration, committee work, articulations and agreements, evaluations, requirements, and paperwork, says Burkhardt.

"All these tasks ooze with students' lives, their stories, their dreams, their struggles and their successes," she explains. "When I'm able to help them with a problem they don't think can be solved, it's all worth it."

Burkhardt has seen technological advances help ease advising, but, she says, a human touch is still needed. "It may list the classes they still need, but it doesn't tell them the order to take the classes so it's the most beneficial to them," she notes.

Burkhardt says working with great colleagues over the years has made work enjoyable. She's seen the workload and staff grow as the College of Science and Health's enrollment has increased. But, she says problem-solving with students and helping them through advising hurdles is the highlight.

"I'm optimistic and somewhat of a Pollyanna," she says. "I believe good things are going to happen."



CARLA BURKHARDT, College of Science and Health Dean's Office, received the 2012 Academic Staff Excellence Award during the annual Academic Staff Council meeting in September. Recipients are selected by a committee of peers.

The Carla Burkhardt file

- Worked on campus since 1990. Academic Assistant to the Dean in the College of Science and Allied Health since 1998.
- Campus involvement: Academic Staff Council; Golden Key International Honour Society; Foundation Scholarship Committee; Centennial Capital Campaign Committee; numerous search and screen committees
- Community involvement: church council and choir; UW-L Choral Union; poll inspector.
- Two degrees from UW-L — bachelor's in elementary education, 1986; master's in college student personnel, 1993.

FIT TO BE *queen*

UW-L student promotes physical activity as Miss La Crosse/Oktobertfest

These days UW-La Crosse sophomore Tianna Vanderhei is balancing her schedule between studying textbooks, speaking to crowds in her German dirndl and eating plenty of bratwurst. But she's staying fit too.

Vanderhei was crowned the new Miss La Crosse/Oktobertfest Sept. 15.

"My motto is to take it one day at a time," she says regarding the full schedule of school presentations, parades and public appearances in the year ahead while she is also a student in UW-L's athletic training program.

But Vanderhei says she is the right person for the job, as she loves connecting with the community.

"You learn about yourself, the community and you get scholarship money to use toward school by simply doing something you love," she says.

At its core the Miss La Crosse/Oktobertfest program provides scholarship funds and promotes higher education and community service, says Beth Bruzek-Vogt, the program's director. Vanderhei earned a total of \$4,750 in scholarship funds to apply to tuition at UW-L. Overall this year the program awarded \$16,000 in cash or in-kind scholarships, as well as many gifts to the contestants in the program.

"The benefits they receive, whether they win or not, are tools that help them network in the community, which will help with future career and professional goals," notes Bruzek-Vogt.

And, as Miss La Crosse/Oktobertfest, Vanderhei will also be able to promote a platform she has lived by her entire life: "Be the best you: stay physically active."

Vanderhei says she has been physically active since she was

Tianna Vanderhei is a UW-L sophomore majoring in athletic training and minoring in nutrition. She is a 2011 Wisconsin Rapids Lincoln High School graduate.



five years old, participating in dance and later playing soccer. Today she continues to dance and runs three to four miles per week. She regularly runs 5K races and looks forward to one day running a half marathon.

"My first 5K, I walked part of it," she says. "The last one — I ran and sprinted at the end. It's about motivating yourself and continuing to reach for a higher standard."

She picked the platform because she sees how staying physical active helps her feel good and stay focused.

"Statistics show the health benefits from working out," she says. "I know people are busy and lead stressful lives. It's just prioritizing time. Think of it as a business meeting with your boss. You have to follow through with it. You can't cancel on your boss."

She eventually would like to do rehabilitation for children and people with special needs in a hospital setting.



ESS Adventure Program takes national exam

PASS RATE IS 97%

The Exercise and Sports Science Department/Adventure Programs hosted the National Association of Challenge Course Technology (ACCT) Level I challenge course exam on campus, Oct. 11. Recreation, Exercise and Sports Science (ESS) students and area teachers sat for the exam.

The certification process included both a standardized written exam and a technical skills test. The exam was proctored by a certified national trainer/tester from ACCT.

Typically, 95 percent of UW-L students pass on their first attempt. This time it was 97 percent. The ACCT certification process increases the marketability of UW-L students and is necessary in their national job search.

The graduate physical education program in the Exercise and Sports Science Department offers a concentration in adventure and outdoor pursuits. Students trained and certified in adventure education have secured leadership roles in adventure programs in schools, colleges and camp settings nationwide.

— Professor Jeff Steffen, Exercise and Sports Science Department



A LOOK AT THE LA CROSSE INSTITUTE FOR MOVEMENT SCIENCE (LIMS)



A motion capture system with virtual reality provides real-time feedback of movement performance.

In 1996 the Physical Therapy Program transitioned from conferring a bachelor's degree to a master's degree. I was hired to develop new graduate courses in research and to stimulate research efforts in the program.

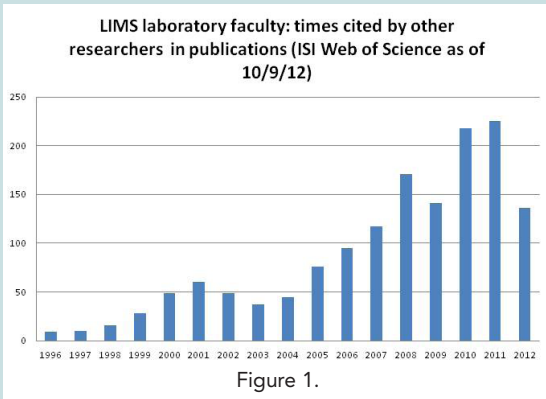
At that time, both the Physical Therapy Program and the Strzelczyk Laboratory were housed in Cowley Hall. The Strzelczyk Laboratory was largely in disrepair and experienced little faculty, staff or student use.

Today, the Physical Therapy Program within the Department of Health Professions grants a clinical doctoral degree and the Strzelczyk Clinical Biomechanics Laboratory is a state-of-the-art facility. Housed within the Health Science Center, the Strzelczyk Laboratory is the hub of faculty mentored student research and applied teaching related to biomechanics and motor control for the Department of Health Professions.

The Strzelczyk Clinical Biomechanics Laboratory is also the primary focus of the La Crosse Institute for Movement Science, created in the College of Science and Health in 2005. The primary goal of the institute is to bring together students and faculty from different departments to study human movement. The laboratory is one of the most productive

research labs on campus and has focused primarily on injury prevention.

Over the years, the laboratory has acquired three-dimensional motion analysis equipment and force platforms to study movement (See adjacent photo), electromyography to study muscle function and pressure distribution technology to study barefoot and in-shoe loading, as well as loads on wheelchair seats.



MORE THAN A RESEARCH LAB

However, the Strzelczyk Clinical Biomechanics Laboratory is much more than just a research laboratory. Annually, more than 70 physical therapy and 25 occupational therapy graduate students use this lab to learn clinical aspects of biomechanics and movement analysis through applied seminar coursework and hands on laboratory experiences. Each year, approximately 10 physical therapy students and two residents from the Sports Physical Therapy Residency Program at Gundersen Lutheran Medical Center complete biomechanics related research projects in order to fulfill course or residency requirements. In addition, Physics Department students participate in lab related coursework as part of the biomedical concentration in

physics and many Exercise and Sport Science Department graduate students complete their thesis work in this laboratory.

UW-La Crosse students have an abundance of opportunities to participate in faculty mentored research on our comprehensive campus. While researchers at larger universities employ doctorate students and post-doctoral fellows to advance research, we do our work in collaboration with graduate students and select undergraduates.

Over the years, this approach has been largely successful for LIMS researchers. It has resulted in faculty and students partnering on numerous research manuscripts and juried abstracts presented at national and international conferences. Undergraduate and graduate students who have worked on projects in the laboratory typically have pursued additional education and/or advanced clinical certifications. And on a larger scale, the number of citations of our work by other researchers in our field demonstrates an upward trend.

So, despite the challenges associated with balancing teaching and scholarship at a comprehensive university, LIMS researchers have found a way to be effective teachers and scholars. The Strzelczyk Clinical Biomechanics Laboratory and the resources it provides enable both quality teaching and research.

In this manner, it has advanced the reputation of our faculty, our students as well as the UW-L campus.

— Tom Kernozek, Professor, Physical Therapy Program

Faculty who have participated in teaching and research activities:

- Assistant Professor John Greany, Physical Therapy
- Stacey Meardon, Assistant Professor, Physical Therapy
- Paul Reutemann, Clinical Associate Professor, Physical Therapy
- Chris Durall, Senior Clinical Physical Therapist, Student Health Center
- Robin McCannon, Associate Clinical Professor, Occupational Therapy
- Robert Ragen, Professor, Physics
- Carl Foster, Professor, Exercise and Sport Science
- Glenn Wright, Assistant Professor, Exercise and Sport Science
- John Porcari, Professor, Exercise and Sport Science

UW-L professor's trip to Cuba opens new avenues



UW-L Geography and Earth Science Professor Georges Cravins is the first U.S. geographer to visit the department of geography at the University of Havana since the 1960 U.S.-Cuba embargo. He's pictured here on the Malecón, Havana. Morro Castle is in the background.

Story by UW-L students Melissa Moss and Spencer Hoostal

UW-L Geography and Earth Science Professor Georges Cravins' summer trip to Cuba did more than just increase his knowledge of the country. He's gained information that will enhance his students' classroom experience. He also made contact with other geographers in Cuba that will allow him to establish permanent ties to the island, and to conduct additional research related to his work at UW-L. Cravins made new discoveries while in the country with his fellow geographer and friend, William Rosas of Tampa, by meeting with students, business owners, workers, artists, doctors and geography professors, which all aided him in new discoveries.

Until recently, the U.S. government's 1960 embargo of Cuba had prevented other geographers from making this trip, limiting communication between U.S. and Cuban universities. The embargo was put in place because of Cuba's alignment with the Soviet Union during the Cold War. All U.S. tourists were banned from visiting Cuba, but since the embargo's limits were loosened by the U.S. government in 2011, exceptions have

been made for individuals meeting certain requirements. Cravins was told that UW-L is only the second university to establish contact with the University of Havana. The University of Alabama-Tuscaloosa was the first.

Many factors make Cuba a good candidate for exploratory field trips and Cravins is excited about additional visits. He can envision many possibilities for UW-La Crosse, including:

- Exploring ties with faculty at the University of Havana;
- Making an effort to understand Cuba's successes in hurricane evacuation, medical education, poverty reduction, organic and sustainable agriculture, and adult education and adult literacy programs;
- Exposing UW-L's faculty and students to Cuba's climate and its varied topography;
- Increasing public awareness of Cuba's major role in global and Latin American politics and in the development of modern Latin American music.

Exploring Cuba gives travelers insight into some of the country's most surprising facts,

such as its 100 percent adult literacy rate and its universal health care program. Knowing Spanish or traveling with someone who is fluent in the language is needed when traveling in Cuba, says Cravins. Those unfamiliar with the language will struggle with navigating the country. Additionally, when traveling outside tourist areas, it becomes evident that Cuba is a low-income, Third World country.

Cravins thinks making additional contacts within Cuba to engage UW-L students in social or environmental projects is possible. While in Cuba, Cravins and his friend brought medicine and vitamins to organizations which serve the poor in Havana. These organizations gave Cravins additional ideas of how to help. Because of the success of his trip, Cravins will give a number of public talks on Cuba. He is also preparing a paper to deliver at a geography congress which will be held at the University of Havana in November 2013. Cravins hopes to take students with him. For more information, Cravins may be reached at gcravins@uwlax.edu.



Journal illustrations by Allison Gawboy

A 'FRIEND AT THE END OF YOUR PEN'

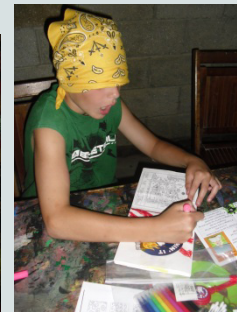
Camp Yellow Ribbon provides help for military youth

Military youth whose parents are deployed face unique stressors that can be eased through awareness and support. Therapeutic Recreation graduate students facilitated a day of journaling at Camp Yellow Ribbon for 7 to 14-year-olds at the Indian Mound Camp in Oconomowoc during summer 2011.

The leaders included Ashley Lawinger and army veteran Amy Burns; 'BOON' Murray, UW-L Professor, certified in journaling through the Center for Journal Therapy; and Lindsey Kirschbaum, UW-L alum and Easter Seals Wisconsin Southeast Respite Coordinator, Undergraduates Allison Gawboy and Caitlin Malin helped Murray reprise a second journaling workshop during summer 2012. They focused on feelings using quirky books and feelings cards illustrated by Todd Parr. Campers imitated Parr's style of illustration in their own paper sack journals by drawing activities that reinforce a positive mood.

Youth experiencing deployment of a parent need emotionally supportive environments with strong attachments. Camp develops a peer bond among youth commonly bullied due to the controversies of U.S. participation in war. Campers may cultivate patriotism with activities such as bike parades, writing stories about family members who are serving, and excitement for accessories that foster pride in military identity such as an antique yellow trainman bandana, camo silly bandz, and patriotic visors.

Counteracting the violence of war with a peaceful environment like camp helps



Photos courtesy of Easter Seals Southwest Wisconsin.

youth feel safe when they make a paper sack journal as a container of their worries, learn to use a glow-in-the-dark finger labyrinth to calm their fears or create mindful connection with a distant parent, hear a comforting read-aloud (e.g., *The Invisible String*), or tap out Boom Chicka Boom with patriotic bottle caps. When campers write down their feelings, they can make sense of them. Youth may find that drawing and doodling help express feelings that are hard to put into words.



Those from the UW-L Therapeutic Recreation program involved in a project to help military kids include, from left, Lindsey Kirschbaum, Boon Murray, Amy Burns and Ashley Lawinger.

Camp is an opportunity to teach tolerance when campers customize a 'global kids' Peace Pledge. They pledge in writing to be peaceful at home and school. When camp counselors and volunteers model resilience and talk about resilience, campers express resilience too.

A 10-year-old camper summarized what she learned from a journaling session featuring a read-aloud to prompt reflection: "They read us a book called *The Invisible String*. It was about a mom and two kids who couldn't sleep, and all the other kids in the world that had an invisible string attached to their hearts. And when they were missing somebody they just tugged on it and then the other person could feel a tug on their heart back. When my dad's gone I know that he's helping other kids and other people to have a better life, so we can put the invisible string between the two countries and all around the world."

— Susan "Boon" Murray, Professor, Recreation Management/Therapeutic Recreation Department

RETIRED PROF WRITES GUIDE TO REDUCE STRESS

Inhale. Exhale. Relax.

During his teaching career, every time the office phone rang the retired UW-La Crosse Health Education Professor Dick Detert would remind himself do a breathing technique. Eventually, he caught himself doing the stress-reduction exercise at the phone's ring without having to remind himself. It had become a new habit.

Today, a relaxation reminder with an incoming email would offer more opportunity. Based on the cue one uses, Detert says it's important to find a three-to-five minute practical relaxation technique at work or home — wherever a person feels mounting pressure. "The secret is to do them nearly every hour throughout the day," he explains.

To help with that, Detert has collected relaxation techniques from his 30 years presenting stress-reduction programs and put them in a book, "Brake/Breaktime: A Personal Guide to Reduce Your Daily Stress." The collection includes an array of relaxation techniques including breathing, meditation, imagery, ponderings and more.

"There's nothing in the book that I haven't tried myself," says Detert, noting that different techniques are needed for different people. "There's no one technique for everybody."

Along with the breathing relaxation techniques he used during his office days, Detert finds relaxation in writings too. "Sometimes I just need to stop, read a saying and see what meaning it has for me," he says.

Detert says the main challenge for many is realizing that they're facing stress — something he's seen people improve on over the years. Once a person realizes stress, they should

establish a relaxation habit that works for them, he advises.

A major irony in the workplace has been the growth of personal technological devices — smartphones, iPads and others — designed to add convenience and make life simpler. But, technological advances in many cases have actually had the opposite impact, says Detert.

"Here we are many years down the road and many of us have more stress in our lives as we find ourselves constantly tuned in and available most of the day," he notes.

Detert compiled the book to help people become more relaxed and find more balance in their lives — "That is the message in the book," he explains.

Find the book at <http://relaxwithdrdick.com>.

TRY THIS TO RELAX —

'The Dare Technique'

1. *Inhale normally.*
2. *Exhale and **Detach** from your task.*
3. *Inhale and **Assess** what you want to do next.*
4. *Exhale and **Relax**, be loose.*
5. *Inhale and **Energize** and respond to your next task.*

Repeat once or twice.



About Dick Detert

- Holds bachelor's degree in health-physical education (1969) and master's degree in health education (1978) from UW-La Crosse.
- Holds a doctorate in education from Southern Illinois University (1984.)
- Taught in public schools at Mischot and West Bend before returning to UW-L in 1978 to teach in the Health Education and Health Promotion Department.
- Retired in 2002.
- Has presented stress-reduction programs to teachers, business professionals, prison inmates, athletes, health care workers and others for more than 30 years.
- Owner of New Dimensions Consulting.



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BILL OTTO

TWO LONG-TIME REC MANAGEMENT FACULTY RETIRE

'Doc Otto' remembered

The face of the Recreation Management program has taken on a new look in the last two years. Two professors who taught nearly half of the undergraduate rec courses for the past 20-plus years are no longer on staff — George Arimond retired in 2011 and Keith Wadell last fall.

The solid list of courses and practical experiences that make up the current recreation management curriculum are largely due to these two faculty. Arimond served as department chair much of his career on campus. Wadell was recreation management program director. Both still live in the La Crosse area.

Arimond consults for recreation businesses around the country. He also volunteers with the community's Silent Sport group, building trails in Hixon Forest and promoting canoe routes in the Coulee Region.

Wadell is barely a few months into retirement, but continues his long-time work with the National Recreation and Park Association. He develops standards for playground safety and design.

Students in the '60s, '70s and '80s certainly will recall the gregarious Bill Otto. Otto died this summer at the age of 79. He was chair of the Department of Recreation Management and Therapeutic Recreation during the '70s and served a short time as Interim Dean of the College of Health, Physical Education, and Recreation.

Those who came after Otto's retirement in 1991 best remember him as an Oktoberfest Festmaster. He was a frequent guest at autumn UW-L functions where he would lead a few songs and personify the spirit of *gemütlichkeit*.

— Professor Steve Simpson, Recreation Management and Therapeutic Recreation Department



GEORGE ARIMOND



KEITH WADELL