

Science & Health NEWS



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

VOLUME 10, NUMBER 2

SUMMER 2015



Therapeutic Recreation Student Anne Glover completed a 16-week therapeutic recreation internship at Walker Methodist Health Center in Minneapolis. She helped the center launch a music program for dementia patients to help them with memory.

THE *music* MIRACLE

During summer 2014 Anne Glover completed a 16-week therapeutic recreation internship at Walker Methodist Health Center in Minneapolis. The experience in the dementia care unit, “Took me outside my comfort zone,” she says.

Glover, from Edina, Minnesota, regularly guided the 25 residents under her care through therapeutic activities such as, crafts and outings. All required a thorough understanding of each person’s individual habits.

“In a nursing home each day there’s something different, and (resident) behavior can change in a minute, so you need to know how to deal with surprises,” explains Glover. “It is important to have a few back up ideas in case one may not work.”

Glover found support from both UW-L site supervisors Patricia Ardovino and Cathy Schutt. Both encouraged her to, “Become more independent, find the courage to make decisions in the moment, and to develop a high level of professionalism.”

Her greatest accomplishment came helping Walker Methodist launch a Music and Memory Program, the goal of which is to improve the quality of life for residents with dementia. Compiling the music for this project involved interviews with residents and their families. Glover gave each resident a specially prepared iPod shuffle — containing the music they love — which led to a profound transformation.

“There were behavior changes that families hadn’t seen for years —clapping, smiling, bobbing heads, tapping feet and dancing,” notes Glover. “Family and staff alike were wowed by it.”

Glover is currently employed at Walker Methodist as a Therapeutic Recreation Assistant.

See the change: www.youtube.com/watch?v=GTTIKBp0mdg&feature=youtu.be

MORE ABOUT THE RECREATION MANAGEMENT AND THERAPEUTIC RECREATION PROGRAM ON PAGE 3 >>

in this issue



6. Internships are key for Rec Management, Therapeutic Rec



10. NMT program accredited



14. Where are they now ... and doing what?: Jack Curtis



18. UW-L Math Department honored

From the editor A few changes ahead

Greetings! As we move toward the 2015-16 school year, we are adding two new sections to our newsletter.

We will continue highlighting different departments, as with this issue the recreation management/ therapy recreation department. However, also starting with this issue, where internships are required, a few students who recently completed their internships will be interviewed.

Another new section, and also in this issue, is “Where Are They Now and Doing What?” This section we will have a question-and-answer session of a UW-L retiree who has become involved in a very interesting second career.

Finally, occasionally we will have an issue that does not highlight a department, but a different topic. This will occur with our upcoming winter issue, distributed in January, where the topic will be undergraduate research.

Please feel free to contact me at any time if you have comments or suggestions regarding the College of Science and Health newsletter.

Phil Wilson | pkwilson@centurytel.net



Phil Wilson

Science & Health NEWS

UNIVERSITY OF WISCONSIN-LA CROSSE
COLLEGE OF SCIENCE AND HEALTH NEWSLETTER
Summer 2015 | Vol. 10, No. 2

The UW-L College of Science and Health News is published in January and July for alumni and friends. Copy deadlines are May 1 and Nov. 1. Submit news items to Phil Wilson, Editor, pkwilson@centurytel.net.

Editor

Phil Wilson
Professor Emeritus, Exercise
and Sport Science Department

University Communications

Staff Writers
Kjerstin Lang
Brad Quarberg, '85

Editorial Assistance

Brad Quarberg, '85
University Communications
Office

Photography

Sue (Sullivan) Lee, '82 & '87
Hanqing Wu

Art Director

Florence Aliesch
University Communications
Office

www.uwlax.edu/sah

View past issues at:

www.uwlax.edu/sah/html/newsletter.htm



Follow UW-L on Facebook www.facebook.com/UWLaCrosse
Follow UW-L on Twitter <http://twitter.com/uwlacrossenews>

CLASS NOTES POLICY

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

Recreation Management and Therapeutic Recreation: Nearing a half century at UW-L

If you live in Wisconsin, it is likely that you regularly benefit from services provided by an alumnus of UW-La Crosse's Department of Recreation Management and Therapeutic Recreation.

As the only nationally accredited recreation curriculum in the state, the majority of state and city park and recreation directors are UW-L alums. They and a good share of recreation professionals at Y's, Boys and Girls Clubs, pools and waterparks, summer camps, long-term care facilities, group homes, behavioral health for youth and adults, and campus recreation programs, studied recreation at UW-L.

Our graduates go on to do exceptional things in Wisconsin — and all over the world — but their impact is not always appreciated. This article hopes to change that.

The department has two distinct, but interrelated, degree programs. Each offers degrees at both the bachelor's and master's levels. "We are in the



Bill Carlson, a UW-L Recreation Management alumnus and one of the Department's strongest supporters, passed away last November. Here Carlson lectures students about commercial recreation.



Recreation management students shave pine logs that were used to construct the Leopold Center near Baraboo, Wisconsin.

middle of a very positive transition," says Steve Simpson, department chair. "The physical move from old Wittich Hall to our suite on the second floor of the relatively new Health Science Center is the most obvious change, but that's only a small piece of all that is happening.

"Recreation management and therapeutic recreation graduates who have been away from campus for more than five years will see something very different from their time as students," continues Simpson. "And if all of the department's plans for the immediate future fall into place, they'll see even bigger changes in the next few years."

FACULTY GROWTH, RECENT HIRES ADDING TO DEPARTMENT'S STRENGTH

The real heart of the change is the growth in the number of faculty. The teaching staff has grown from 11 to 15 members, and combined with recent retirements, nearly half of the instructional staff has five or fewer years with us. With the energy of a new and larger staff, ideas that formerly were only dreams are starting to become reality. For example:

- Recreation management has a new articulation agreement with Madison College (formerly Madison Area Technical College). Recreation graduates from the two-year institution can transfer to UW-L and complete their bachelor's degree in a timely manner. We are also in the early stages for creating a similar arrangement with UW-Baraboo.
- Therapeutic recreation (TR) has grown from 100 to nearly 300 undergraduate majors. The growing interest in healthcare careers, the increased number of people with age-related conditions (e.g., dementia), and expanded demand for services from youth with autism, youth in residential treatment, individuals with obesity or

Continued on next page.

diabetes, and returning soldiers with trauma all provide career opportunities for TR certified professionals.

- Recreation management is in the middle of developing an online master's degree program through UW-L Continuing Education and Extension. With the same courses as the well-established on-campus master's program, working professionals will be able to pursue an advanced degree without stepping away from their current jobs.
- Recreation management is beginning a major update of its undergraduate curriculum. The key change will be optional emphasis areas (e.g., community-based recreation, tourism, outdoor recreation) within the major. Students will continue to take core courses that have long been in place, but will also have the opportunity to develop a specialty.
- Our department has collaborated with UW-L's philosophy department to create the Midwest Consortium of Philosophy and Outdoor Education (McPoe). The organization's purpose is to advance interdisciplinary instruction between outdoor recreation/ environmental education and the humanities. McPoe involves hosting weekend workshops that attract students, outdoor professionals, and university faculty and staff from other campuses throughout the Midwest. The next workshop is September 2015.
- In the past we have had three to six graduate assistants within the department to assist faculty members with their teaching and research, but the number has now doubled with additional assistantships from outside the department. For 2014-15, there are recreation management or therapeutic recreation graduate assistants working in UW-L Rec Sports, UW-L Outdoor Connection, UW-L's Adventure Program in the Exercise and Sport Science Department, Western Technical College's Recreational Sports Program, and UW-L's Disability Resources Service. For the department, these unique opportunities serve as recruiting tools for attracting top-notch graduate students. For the students who receive these positions, the

Love Your melon became UW-L's newest student organization on March 10th in time to sell 100 hats for pediatric cancer awareness at St. Baldricks annual shave event in the Eagle Recreational Center. The club represents university students selling hats emblazoned with 'love your melon' where two hats are purchased and the second hat is given to a pediatric cancer survivor. Club members are 'ambassadors' who deliver the second hat. Club President Meghan Barrett (2nd from right) is a therapeutic recreation major.



recreation-related work experiences are an excellent complement to their academic program.

- Recent therapeutic recreation graduates continue to excel on the National Council for Therapeutic Recreation Certification (NCTRC) examination. UW-L's passage rate on the exam is 92.7%, compared to the national passage rate of 75.3%.

SO, WHAT IS A MAJOR IN RECREATION MANAGEMENT AND THERAPEUTIC RECREATION?

Those in the Department of Recreation Management and Therapeutic Recreation, unlike other departments in the College of Science and Health, are frequently asked to explain their programs.

Whereas representatives in departments such as chemistry or physics or occupational therapy rarely are asked why their programs exist on the UW-L campus or why their son or daughter ought to major in those fields, these are a weekly occurrence for recreation management and therapeutic



Students visit Aldo Leopold's famed "Shack" near Baraboo, Wisconsin.



The Inclusive Recreation class takes a field trip to Flying Horse Stables to learn about horseback riding for people with disabilities.



The Facilities Planning class undertakes a class project to better understand land forms.

recreation. Maybe it is because people value their own recreation pursuits, but don't always know how this translates into an area of academic study.

They do not understand that the best recreation opportunities happen because trained professionals – trained professionals who went through college programs in recreation management or therapeutic recreation – manage facilities, lead programs, and advocate for more parks, more athletic fields, more pools, and more funds to make sure that recreation is part of everyone's lives.

Recreation holds an odd place in American consciousness. On one extreme, it is perceived as something extra and not particularly important – something to do only after the more important tasks in life have been accomplished. On the other extreme, it is recognized as an integral element in the life of a well-rounded individual.

For example, the September 2014 issue of Outside Magazine named La Crosse one of the best places in the country to live. The criteria for the rankings included paddling opportunities, miles of hiking trail, and the number of bikes shops. In other words, quality recreation equates to a high quality of life.

A DEPARTMENT NEARING 50

For decades, Recreation was known as “those guys in Wittich Hall.” In 2009, however, the entire department moved out of Wittich to new space in the Health Science Center on the western edge of campus. While the purpose of the move was to vacate antiquated facilities that had not been renovated for a century, there is some symbolism to the old space as well.

UW-L Recreation's roots are in physical education, so it made sense that the department's original home would be in the old PE building. First offered as a joint degree in physical education and recreation in 1945, recreation became a stand alone major in 1966 and its own department in the College of Health, Physical Education and Recreation in 1967. The first therapeutic recreation concentration was offered in 1974, and the first master's degrees, both recreation management and therapeutic recreation, were offered in 1977.

Today the department is in the College of Science and Health and enjoys excellent classrooms and offices in the relatively new Health Science Center.

In the broadest sense, the recreation curriculum developed at UW-L focuses on two things. First is to instill in students the value of recreation and leisure. Recreation is a significant contributor to physical and emotional health, happiness, and quality of life; in a society focused on work and money, these benefits can be forgotten.

Second, it teaches students the technical skills to manage recreation programs and facilities. This includes direct leadership of recreation activities, development of recreation programs, administration of recreation programs and facilities, and in the case of therapeutic recreation, the use of recreation as a therapeutic tool for people of all abilities. Accomplishing these objectives of quality professional training requires a great deal of practical experience through volunteer hours, part-time and seasonal work, and a mandatory internship.

For more information on the Department of Recreation Management and Therapeutic Recreation, visit: www.uwlax.edu/rec-management-and-therapeutic-rec/



Article by Steve Simpson, Professor and Department Chair, Department of Recreation Management and Therapeutic Recreation



Keegan Mills



Internships are key for Rec Management, Therapeutic Rec

RECREATION MANAGEMENT INTERNSHIP PROGRAM COORDINATOR, GRETCHEN NEWHOUSE:

The primary philosophy of the Recreation Management major is to provide students with a broad base of theoretical knowledge and skills, combined with a heavy emphasis of hands on practical experiences in the classroom and especially during the internship. This learning-by-doing approach throughout the internship prepares students to assume middle management positions once they graduate in governmental, commercial, tourism, and not-for-profit recreation and parks agencies across the country.



Gretchen Newhouse

An internship is required for Recreation Management majors and is designed to be a culminating experience in which students put into practice what they have learned. The undergraduate internship is 16 weeks with a minimum of 40 hours per week. The graduate internship is a minimum of 420 hours, working either part-time or full-time. The internship encompasses programming, marketing and public relations, human resource management, facility operations and maintenance, and budgeting and financial management. Student majors select a role and setting they prefer and are then supervised by an agency and university supervisor throughout their internship. Currently, Morale, Welfare, and Recreation (MWR) provide many entry-level job opportunities as featured in this profile.

THE INTERN ... KEEGAN MILLS HOMETOWN: MAPLE GROVE, MINN.

THE INTERNSHIP SITE ... The U.S. Naval Training Center, Morale, Welfare and Recreation Department, Great Lakes, Illinois

"It was a dream come true finding such a great job right out of college," says Keegan Mills, who is currently employed as the Outdoor Recreation Specialist, with the Morale, Welfare, and Recreation Department at the Great Lakes Naval Training Support Center (MWRGL). This employment opportunity was preceded by an action packed internship at MWRGL, which surprised Mills in a number of ways. "They didn't treat me like an intern. My supervisors said we trust you, so go for it." Mills was amazed at the impressive amount of experiences and sheer variety of programming he was exposed to, "Seeing everything that's done on base, it's like a whole year of training packed into 16 weeks." Mills' education at UW-L helped him in all aspects of the internship, stating, "I think the classes and experiences in college prepared me for the challenges of a real job."

Mills chose the MWRGL Ultimate Cardboard Boat Regatta for his internship's major project. "I had never been in charge of a project of this size from start to finish," and from expanding the scope of the event to include all the base commands, to budgeting, marketing, and overseeing the event itself Mills was encouraged, "to put my stamp on it."

Both as an intern, and now a full-time employee, Mills says his role with MWRGL is a, "Cool way to give back to the sailors for their service to us."



Click on <https://youtu.be/F9cw4Hbipmg> for further information on his internship site

Rock and Roll hall of famer Joan Jett and Keegan Mills at the 4th of July celebration on base. Mills was involved with helping all of the bands get around on base to and from sound checks and meals.



This was one of Mill's outdoor recreation programs—an evening kayak program. Mills went out an hour before sunset and got to paddle around the Naval Station's marina and watch the sunset floating in kayaks out on Lake Michigan.

**THERAPEUTIC RECREATION INTERNSHIP PROGRAM COORDINATOR,
SUSAN 'BOON' MURRAY:**

Students majoring in Therapeutic Recreation complete a 16 week or 640 hour internship supervised by the involved agency and a TR program university supervisor, who must be a Certified Therapeutic Recreation Specialist (CTRSs). Pre-approved sites which employ at least two CTRSs are located predominantly in Wisconsin and Minnesota, but also include Iowa, Georgia, Alaska, Colorado, Maine and Oregon. Majors select a role and setting they prefer. Currently, geriatric settings predominate entry-level job opportunities as featured in this profile.



Susan "Boon" Murray

Agency supervisors can earn CEUs for mentoring TR interns who complete a special project under new guidelines from NCTRC. Intern Mary Anne Glover's project brought to life the APIE process. With her agency supervisor, she helped implement a national evidence-based program focused on the therapeutic benefits of personalized digital music. She sent a standardized Music and Memory Program questionnaire to families to identify residents' lifelong music listening preferences (Assess), used responses to create individualized i-pod playlists loaded on the iPod shuffle (Plan), helped residents self-mediate their mood by listening to their playlists, (Implement) and recorded and reported residents' reactions to a national outcomes database (Evaluate). It was thrilling to be featured facilitating residents' revitalization in the agency's You Tube as explained in the award winning documentary *Alive Inside*.



Therapeutic Recreation Major Anne Glover works with a patient during her internship in summer 2014 at Minneapolis' Walker Methodist Health Care Center.



**THE INTERN ...
ANNE GLOVER
HOMETOWN: EDINA, MINN.**

**THE INTERNSHIP SITE ...
Walker Methodist Health Care
Center, Minneapolis**

During the summer of 2014 Anne Glover completed a 16-week therapeutic recreation internship. Her experience in the memory care unit, "Took me outside of my comfort zone," indicated Anne.

She first learned the habits of the 25 residents, for whom she would provide recreational services. "In a nursing home, each day there's something different, and (resident) behavior can change in a minute. You need to know how to deal with surprises." She also indicated "that is important to have a few back up ideas in case one may not work."

Glover found support from both UW-L site supervisors Patricia Ardivino and Cathy Schutt. They encouraged her to become more independent, find the courage to make decisions in the moment, and develop a high level of professionalism.

Glover found her greatest accomplishment in helping Walker Methodist launch a Music and Memory program, the goal of which is to improve the quality of life for residents with dementia. Glover gave each resident a specially prepared iPod shuffle—containing the music they each loved. Compiling the music for the project involved interviews with both the residents and their families. "She indicated profound behavior changes that families hadn't seen for years—clapping, smiling, bobbing heads, tapping feet, and dancing." Glover says family and staff alike were, "Wowed by it."

Walker Methodist: The Miracle of Music intern video link:

<https://youtu.be/GTTIKBp0mdg>



Article by Guy Herling,
Assistant to the Dean/
Student Services
Coordinator, College of
Science and Health

UW-L leads the nation in producing physics graduates



Students, faculty, staff and community members listen to Nobel Prize Winner Adam Riess speak this past fall semester as part of the 2014 Distinguished Lecture Series in Physics. The lecture series is one of the many ways UW-L's Physics Department attracts and retains high numbers of physics students.

UW-La Crosse is No. 1 in awarding physics degrees among bachelor's degree granting programs in the country.

UW-L had an average of 31 physics degrees granted annually between 2011-13, making it No. 1 in the nation among bachelor's degree granting institutions on the American Physics Society list.

The achievement comes at a time when the nation is experiencing a growing demand for Science, Technology, Engineering and Mathematics (STEM) graduates. Yet higher education is not producing enough graduates to meet the projected labor market demands, says Gubbi Sudhakaran, chair of UW-L's Physics Department.

UW-L's program stands out as one that is growing to meet this demand. The university attracts and retains students with a wide variety of programs, one-on-one advising, undergraduate research incorporated into

the curriculum as well as thriving student organizations including the Society of Physics Students and Women in Physics.

"The quality of the education and the student-focused programs we provide to our majors are excellent," says Sudhakaran.

Not only that, each year the department invites a Nobel Prize winning physicist to campus to meet and interact with students, faculty and staff and give a public lecture and physics seminar related to their discovery.

"We have amazing faculty, staff and students, and the faculty and staff have truly built this program into what it is today," says UW-L Chancellor Joe Gow. "They've made a choice to go the extra mile."

Other top higher education institutions on the latest list include SUNY College at Geneseo and U.S. Naval Academy, which took the second and third spots, respectively. Other UW schools on the list include UW-Eau Claire and UW-River Falls.

UW-L's Physics program offers specialty tracks in astronomy, computational physics, optics, physics education, and biomedical and business concentrations; along with dual degree programs in physics/engineering and physics/physical therapy.

Physics graduates go on to work in a variety of careers such as engineering, computer hardware/software, research and development and education, says Sudhakaran.

GRADUATING HIGH NUMBERS IS A TREND

UW-L has consistently placed among the top five on the national list for graduating high numbers of physics graduates. UW-L tied for fifth place for classes graduating from 2006-08, third for classes graduating between 2008-12 and second for classes graduating between 2010-12.

OTHER RECENT UW-L PHYSICS DEPARTMENT ACCOLADES:

In 2013, the program was awarded the American Physical Society Award for Excellence in Undergraduate Physics Education, which recognizes physics programs that support best practices in education at the undergraduate level.

In 2012 the program was cited by the American Institute of Physics Career Pathways Project as a model program with regard to its success in placing its graduates into STEM careers.

Recognition from the National Task Force on Undergraduate Education in 2003 and the 2004 Teaching Excellence Award from the UW System Board of Regents.

For the 16th year in a row, UW-L's Physics Department will welcome a Nobel Prize Winner in physics in the fall to meet with faculty, staff and students and give a public lecture. David Gross, 2004 Nobel Laureate in Physics, will be on campus Sept. 24-25. Gross is from the University of California, Kavli Institute for Theoretical Physics, Santa Barbara.

Chem prof named UW System scholar

A UW-L associate professor of chemistry is among five faculty members statewide to receive Regent Scholar awards.

Heather Schenck received a \$36,706 grant for “Rotation barriers in hydroxamic acids: Optimization of metal-binding molecules for medical and industrial applications.” She and the other recipients were honored by the Research, Economic Development, and Innovation (REDI) Committee at the UW Board of Regents’ February meeting in Madison.



Heather Schenck

Schenck’s project will research hydroxamic acids, small chemical structures used in medicine and industry. The materials bind metals and are used for processing ores and removing excess iron from blood. They are also used in cancer chemotherapy and contemplated for use in the treatment of viral and bacterial infections. Undergraduate researchers will focus on activities that involve chemical synthesis and nuclear magnetic resonance spectroscopy. Both skills are essential for chemical professionals.

The UW System Regent Scholar program was introduced last fall to recognize and reward innovative faculty-student research and to provide

support for collaborative UW project initiatives with Wisconsin business and industry.

“These grants recognize and honor outside-the-box thinking by UW faculty and undergraduates across Wisconsin. The awards provide recognition at the highest level for work done by our dedicated and talented faculty to prepare a high-quality workforce for the 21st-century economy and ultimately to accelerate business and community development statewide,” said UW System President Ray Cross.

Other recipients and their projects include:

- UW-Eau Claire, Jennifer Dahl, \$50,000, “Janus nanoparticles: A practical pathway toward functional materials for efficient photovoltaics, optical circuits, and nanomedicine.”
- UW-Milwaukee, Junhong Chen, \$50,000, “Smart phone-supported sensors for real-time monitoring of heavy metal ions in water.”
- UW-River Falls, Tim Lyden, \$50,000, “Development and testing of a new miniature bioreactor system prototype as an enabling technology for the ‘Living Biopsy’ approach to cancer research and diagnosis.”
- UW-Stevens Point, Christopher Hartleb, \$50,000, “Aquaponics innovation through undergraduate education and discovery.”

UW-L’s Tymeson recognized for adapted physical education work

The Society of Health and Physical Educators (SHAPE America) honored UW-La Crosse Professor Garth Tymeson with the SHAPE America Adapted Outstanding Professional Recognition Award during the organization’s 130th National Convention and Expo in March.

The award honors those who have through their work demonstrated leadership and service at state, regional, national and/or international associations whose mission is to serve the adapted physical education/physical activity (APE/A) profession. The honor also recognized those who have contributed significantly to scholarly publications in APE/A content, or the lives of individuals with disabilities. Tymeson was recognized during the Claudine Sherrill Awards Breakfast.

“The work of professionals like Garth is integral to SHAPE America’s goals, mission and identity, particularly, as we continue to advocate on behalf of individuals with disabilities,” says SHAPE America President, Dolly Lambdin.

Tymeson, from the university’s Department of Exercise and Sport Science, directs graduate and undergraduate APE teacher preparation programs. He



Garth Tymeson

also oversees the UW-L Center on Disability Health and Adapted Physical Activity. Center programs include the Children’s Motor Development Program, the Physical Activity Mentoring Program for Persons with Disabilities, the Adult Physical Fitness Program, and community-based adapted sport programs.

All of these initiatives are collaborative efforts with local school districts, human service agencies, and parent advocacy groups for children with disabilities. In addition, Tymeson serves as project director of the UW-L APE teacher preparation grant funded by the U.S. Department of Education–Office of Special Education Programs.

Tymeson has received more than \$3 million of external grant funding for APE/PA projects. Funding sources have included the UW School of Medicine and Public Health, the NCAA, the General Mills Foundation, the U.S. Department of Education–Office of Special Education Programs, and the Division of Nutrition Research Coordination of the National Institutes of Health. Before working in higher education, he was a PK-12 APE teacher in Rochester, New York. Tymeson received a bachelor’s from SUNY Cortland, a master’s from SUNY Brockport, and a doctorate from Texas Woman’s University in Denton, Texas.

For more information about SHAPE America and its National Convention & Expo, visit www.shapeamerica.org.



Danielle Brunk, left, and Brittany Minshall in front of the UW-Madison School of Medicine and Public Health where they interacted with residents and fellows from the Nuclear Medicine Residency Program.

NMT program accredited

The UW-L Nuclear Medicine Technology Program — one of the oldest nuclear medicine programs in the nation — has been accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology.

The program started with an enthusiastic nuclear chemist — William J. Nieckarz. Students in the program complete three years of coursework on campus and a year of coursework and clinical internship at a hospital. The internship allows students to apply their newfound knowledge, become competent, pass their national boards and become technologists that support the incredible field of nuclear medicine technology.

JUST WHAT EXACTLY IS NUCLEAR MEDICINE?

It is the science of diagnosing and treating patients through molecular, physiologic and anatomic means. It provides physicians with much needed information about all sorts of conditions ranging from whether someone might be at risk of a heart attack, to something as obscure as to whether a person might have a rare type of cancer and pinpoint exactly where it is in their body.

Not only can nuclear medicine diagnose, but also it is able to gain more information on stages of diseases and behaviors of certain



Professor Emeritus Willy Nieckarz with the author of this article, Department Chair Aileen Staffaroni. Nieckarz is credited as a founder of the UW-L Nuclear Medicine Technology program.

diseases that assist physicians in creating better treatment plans, along with better managing of patient disease.

Students who enter the program need to have an excellent grasp of chemistry, biology and physics. This field is truly an excellent application of all of these disciplines.

To seek accreditation from the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT), a program must demonstrate its ability to educate students to apply all of the knowledge that they learn in their first three years to their final year to become competent nuclear medicine technologists who can pass their national boards.

Great effort is spent to make sure that the pre-professional curriculum on campus matches with the professional curriculum taught in the field. There is a lengthy self-study process, along with formation of a quality assurance program and oversight from the JRCNMT.

The JRCNMT then assesses the program on site with several interviews of those involved — from the dean to the clinical coordinators and the medical directors at the hospital. After site evaluator review, the JRCNMT board decides whether the program is worthy of accreditation.

WE HAVE A STRONG NATIONALLY RECOGNIZED NUCLEAR MEDICINE PROGRAM, ALREADY. SO, WHY ACCREDIT THE PROGRAM NOW?

Accreditation provides more opportunities for students. Having an accredited program can provide students with other clinical internship sites than the accredited sites we currently offer. We can expand the program to offer different hospitals with different experiences.

As an accredited program, there are opportunities to have minor affiliates with several of the surrounding hospitals and clinics. This can be utilized to provide students with an awareness of their soon-to-be profession earlier in their career.

In healthcare today, programs have to be as nimble as possible to remain effective and relevant. They also need to be able to think creatively to solve discrepancies from translating education from academia to clinical practice.

With accreditation of our own program, we are responsible for the content we teach to our students and we do not rely on the hospital providers to do this. We can create the change we want to see when new accreditation requirements come to us. We are in a better position to educate and prepare our students.

Another aspect of accreditation is ownership. UW-L professors put countless hours into teaching, mentoring, assessing, encouraging and collaborating with students to become successful in their careers. For most of the students, when they leave campus and go to their clinical site, UW-L becomes a memory.

They begin to identify themselves with the hospital they rotate through and not necessarily the university that prepared them to do well on their journey. Hopefully, by accrediting the UW-L program, we can make sure our soon-to-be alumni remain faithful. When they become leaders in the field of nuclear medicine technology, we hope they reflect fondly on the experience that so successfully prepared them.



PROGRAM EXPOSES FROSH TO RESEARCH

The First Year Research Exposure (FYRE) program is an academic diversity initiative in the College of Science and Health for 12 first-year, underrepresented students of color interested in STEM majors at UW-L. This year, participants' majors included computer science, physics, pre-dentistry, math education, exercise sport science, physical therapy and biochemistry. Students who successfully complete their first year received a \$1,000 scholarship toward their second year tuition.

The FYRE program kicks off each year by inviting students onto campus two weeks prior to the start of the fall semester for "Welcome Weeks." This helps students get situated and familiar with not only the campus, but also the La Crosse community.

Students visit various offices, including Academic Advising, Career Services, Multicultural Student Services, Counseling and Testing, Financial Aid and It Make\$ Cents, and begin to build relationships with faculty and staff.

"My Welcome Weeks experience allowed me to really connect with a small group of people that became my very close friends," says Karyna Quick, a FYRE participant. "I also got to know the campus very well and all of its best studying spots!"

During this time, FYRE students also participate in research exposure modules to learn about a variety of career paths and graduate school opportunities in research. One of this year's exposure events was a stream sampling field trip, during which students collected and analyzed invertebrates on site to determine the health of a nearby stream.

Throughout the academic year, FYRE students received academic support and weekly

REFLECTIONS OF FYRE BY PARTICIPATING STUDENTS:

Corina: "I was exposed to volunteer and research opportunities I otherwise would never have had a chance to have being in FYRE!"

AJ: "I loved how we got to see what people actually do in their career fields. I discovered exactly what I didn't want to do."

Malcolm: "FYRE is a stupendous program that allowed me, as a first generation multicultural student, to succeed here at UW-L. The opportunities that we were exposed in FYRE helped me find my passion to become a biomedical researcher. The faculty in the FYRE helped me become accustomed to college life. Overall, the FYRE is an amazing program if you are interested in the STEM field."

Adrienne: "What I didn't expect when applying for FYRE was how much I would value the program at the end of the year. It truly is a rewarding experience filled with supportive mentors, new friends, and worthwhile experiences."

academic advising. Participants enrolled in gateway STEM classes together, and attended weekly small-group, review sessions for additional help related to the course.

FYRE provides students with opportunities to not only do hands-on, science-related fieldwork, but also learn about research opportunities that will help them as they apply for graduate school. For example, this year FYRE participants went to a site where there was evidence of invasive grass growing which was preventing native seeds from germinating. At the site, students helped collect native seeds and brought them back to campus to germinate for future replanting. At the same event, students learned how they could get funding to do research projects similar to the one they experienced.

Participants also take part in Winter Week, partially funded by a Strategic Initiative grant from the office of the Provost and the College of Science and Health. During the week before the start of spring semester, students attended academic enrichment events that include a resume workshop and half-day visits

to the Mayo Graduate School in Rochester, Minnesota, and the University of Minnesota.

A highlight of FYRE students' Winter Week was the Bell Museum of Natural History where participants got to see the Astrophysics Andromeda exhibit, among others. Closer to La Crosse, FYRE students toured the Upper Midwest Environmental Sciences Center on French Island and the U.S. Fish and Wildlife Service in Onalaska. As a result of these visits, two FYRE participants began volunteering at governmental agencies as a way to continue skill building and career exploration.

Since the program started 2012, 22 students have completed it. Of the 20 who have remained at UW-L, 17 (85%) are pursuing degrees in the College of Science and Health.



Article by T.C. Yang, Graduate Student, McNair Scholars and FYRE Program

Science *play*

Physics department has long working relationship with La Crosse's Children's Museum

A long partnership between the UW-L Physics Department and the Children's Museum of La Crosse has received recognition.

Since 2009, students in Physics 106: Physical Science for Educators have engaged kids in activities and demonstrations at the museum during "STEM Saturdays" events once or twice a month.

Some of the activities have included riding on a hovercraft, using an air bazooka to shoot a ping pong ball through empty soda cans, exploring objects that float and sink in water, making a child's hair stand up with electricity, and investigating magnets.

Physics Department Chair Gubbi Sudhakaran founded the partnership with the Museum's Education Director Christina Knudsen as a way for students to engage in a community-based, service-learning project. All students in the physical science class 106 are majoring in elementary or middle school education, so the partnership gives them an opportunity to practice teaching science to young children — and parents.

Over the years more than 500 UW-L students have engaged museum visitors in hands-on physics activities, impacting thousands of kids in the Coulee region.

"This collaboration is a win-win situation for students who want to be teachers, area kids, and the Children's Museum," says Sudhakaran.



A UW-La Crosse student works with a child on a physics activity through the partnership with The Children's Museum of La Crosse.

Students consistently rank the children's museum experience as their favorite aspect of the course. One student summed it up: "I really loved the Children's Museum assignment and found it the most helpful and applicable part of the class."

The physics demonstrations are so popular that the UW-L Mathematics Department has also started doing activities at the museum with teacher education students.

According to museum staff, parents regularly ask about the physics demonstrations and keep returning to the monthly events.

"Children's Museum families and guests rave over the UW-L Physics Department programming," says Knudsen. "We are so grateful to the department for the continued partnership. The ideas and offerings incorporate family learning and the discovery of the magic of physics. We look forward to many more years."

Physics faculty member Jennifer Docktor says it's important for young kids to see science as being fun and relevant. "Hopefully these events will spark an interest in learning science — both among kids and their parents," she says.

Recently the Children's Museum of La Crosse recognized UW-L physics education faculty, staff, and students by naming them the 2015 Judith A. Bouffleur Outstanding Volunteers of the Year. The award was presented during a ceremony in April to Sudhakaran, Jennifer Docktor, Steve Harris and physics education students.



Article by Jennifer Docktor, Physics Department



MIDDLE SCHOOL SCIENCE AND MATH EXPO

About 170 students from seven La Crosse area middle schools presented their research at the annual Middle School Science and Math Expo May 12 in UW-L's Mitchell Hall Fieldhouse. The expo is sponsored by UW-L Continuing Education & Extension, College of Science and Health and the Gundersen Medical Foundation.

Where are they now ... and doing what?



Jack Curtis: College of Health, Physical Education and Recreation, Professor Emeritus, retired in 2002

Editor's note: This is the first of a new section focusing on faculty who retired from UW-L and then became involved in a second career. In some cases the second career was/is related to their "on campus" UW-L assignment. In other cases, they became involved in a career totally unrelated to their campus assignment.

Q Jack, tell us how you selected UW-L for your undergraduate degree, and then were back in 1975 as a faculty member.

A I originally intended to attend UW-Madison. However, after one visit I realized the size of the university was not for me. My high school wrestling coach, Bill Connors, a UW-L graduate, spoke highly of UW-L and said I'd love it. I came on his recommendation and saw the school for the first time when I was dropped off to begin classes. He was right. I did fall in love with the university, the marsh areas and nearby rivers and lakes — along with the top of the bluff views of campus and campus itself. The university was called Wisconsin State University-La Crosse, not UW-L at the time. I then had such a great experience as a student that one of my goals when

I graduated was to someday return to La Crosse and teach. I wanted to provide for my students what my professors provided for me as an undergraduate. Achieving this goal was a driving force for me to continue on for both my master's and doctoral degrees, knowing those were the preparations I needed if I ever had a chance to return to La Crosse.

Q With all those years at UW-L, summarize what makes UW-L so special.

A Definitely the people. As a student my professors and instructors were very caring and helpful. Many had a major impact on my life. It was like a small family at that time. When I then returned in 1975 as a staff member of the College of Health, Physical Education and Recreation, the same family atmosphere was present. It seemed like every weekend there were family and staff get-togethers, parties, group runs or some other activity. Over the years I've developed great lifetime friendships within the UW-L community.

Q What was your primary assignment as a member of the Health Department?

A First, a variety of classes, but eventually in my main interest areas of stress management, relaxation and nutrition. Those areas comprised my primary teaching assignment until my last five or six years on campus, when I also coordinated the Health, Physical Education and Recreation 105 class. The variety of classes was interesting, challenging and enjoyable.

Q First, being an undergraduate student at UW-L, and then a faculty member from 1975-2002, what experiences contributed the most to your second career?

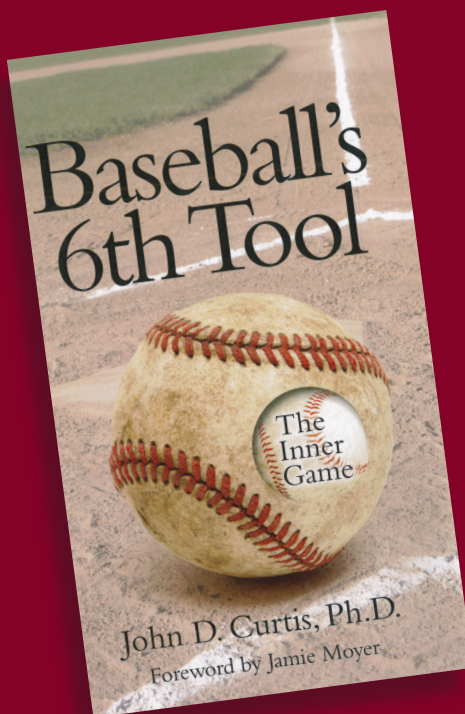
A As a student at UW-L I lettered in cross country and track, but always had an interest in other sports. After graduation I coached at the high school level. Then when I obtained my master's degree, I coached collegiate wrestling and football.

ABOVE PHOTO: Jack Curtis, right, works with Dusty Wathan, manager of Double A team in Reading, Pennsylvania.

During my doctoral studies I had taken several sport psychology classes and used that background with sports teams when I returned to UW-L. First I worked with Gary Wilson, head women's track coach. Later I worked with Mark Guthrie and Joe Thompson, both men's track team coaches. These experiences and background increased my interest in mind, body and relationship to sports performance. In addition, in 1987 I had a one-year sabbatical and studied the mind and body connection to health. The result was I found many techniques used in the health field for healing could be adapted to sports performance. This experience, along with the relaxation and visualization portion of stress management, gave me additional background and understanding of this relationship. As part of my sabbatical I also authored a book for athletes and coaches titled, "The Mindset for Winning: A 4-Step Approach to Mental Skills for Athletes." The book became a catalyst for my opportunity to work with major league baseball players, starting with the Milwaukee Brewers in 1987.

Q Tell us about J & K Curtis & Associates Inc.

A My wife Kathy and I began the business with the focus on sports consulting, publishing and speaking engagements. I do the consulting with athletes, write books, and speaking on attitude, motivation and related topics for success. Kathy does much of the business side, but also assists working directly with players. Some tend to open up more with her on various topics, which aids me in designing their programs. Kathy received her BS and MS degrees in nursing from UW-Madison and then worked at Gundersen Medical Center in La Crosse for 40 years. She retired in February of 2014, which gave us the opportunity to move to northern Wisconsin. In retirement she continues to be involved in community and church activities and programs that promote health and fitness.



THE CURTIS FILE

J & K Curtis & Associates Inc.: 2002 to present. Purpose: Sports Consulting ... current specialty, Major League Baseball.

Education: B.S. UW-L, 1969; M.S. University of Northern Colorado, 1971; Ph.D. University of Utah, 1974.

Publications: 13 books, 26 professional articles and 4 non-print publications (video/audio).

Presentations: approximately 1,000, including keynote speaker, workshops, breakout sessions, etc.

Q What do you actually do?

A My main focus is working with athletes on their goals and needs. Often times a player is struggling and knows what the problem is and other times they're searching for the problem. Usually a combination of a player's evaluation of himself and input from coaches allows me to design a program for that player. Other times a player wants to prevent problems re-occurring and has specific needs that he wants to address. I help them

construct their program. Basic skills that I use include: teaching how to relax during games and identifying negative self-talk, that's become habitual. Once corrected visualization is incorporated. Visualization may include mental recall to recover muscle memory of when things were clicking and/or mental rehearsal, in which they visually prepare themselves for an upcoming game. This process is adapted to the individual player and can be used successfully by both pitchers and position players alike.

The main topics I cover are dealing with confidence issues, stress, perfectionism, negative self-talk, goal setting, and sleep issues. I also have worked with injured players.

Q In the last few years you have been working with only major league baseball. In the past what other sports organizations have you worked with?

A In 1974 I started working with the U.S. National Ski Jumpers team. Then in the 1976 Winter Olympics both the ski jumping team and combined teams (ski jumping and cross country). From 1976 to 1987 I again worked with both Olympic and National Ski Jumping teams, and later with the Olympic demo curling and the table tennis teams. Also, I worked with the UW-L men and women's track teams. In 1989 and 1990 I worked with the U.S. Army Golden Knights Parachute team, which won two national championships and one world championship. In the 2004 Summer Olympics UW-L grad runner Andrew Rock used variations of my program and won a gold medal.

Q Regarding baseball, in the past you worked with the Milwaukee Brewers twice, from 1987-92 and again from 2002-04. Then the Seattle Mariners from 2005 to 2010. Finally starting in 2011 and still now with the Philadelphia Phillies. What specifically are you now doing with the Phillies?

A I came over to the Phillies in 2010 part time while I finished my contract with the

Continued on next page.

Mariners. They had won a world championship and then were one of the top teams in baseball for four to five years. At that time my assignment was to work with minor league players. Many of those players were traded for veterans, which kept the Phillies as one of the top teams in major league baseball during that period. My focus now is on developing young players so they can quickly move up to the major league. Five players I've worked with in the past few years are on the Phillies major league roster now and more will be coming up during this season. We're in the rebuilding cycle, but for me it's exciting to see players move up in our own organization and to maintain contact with them as they move from level to level.

Q You are really busy during spring training in February and March with the Phillies in Florida. What are you doing with them after spring training and during the regular season?

A I usually take around three or four weeks off after spring training and then have a flexible summer schedule after that. I try to make at least one visit to each of the six affiliate Phillies teams, then usually focus on two or three levels where top prospects are playing. I make multiple visits to those teams. Additionally, I'm often asked to make a trip to work with a specific player that's struggling. My schedule is very flexible and I have considerable free time during the summer. Spring training is the busiest, but living in northern Wisconsin, being in Florida in February and March isn't much of a hardship.

Q I understand for years you have had players visit in Wisconsin during the off season. Are you still doing this?

A Yes, we still have players visit us in Wisconsin. The Phillies decide which players will be involved and starting in November we have a player come to our house every week for two to three days. It's an opportunity for players to work in a non-baseball/non-stress environment and focus on their mental game, without outside distractions. I get to know them on a personal level and build trust and deal with issues and techniques that can rarely be dealt with during the season, due to time constraints. Kathy always wanted to run a B&B so this is her opportunity. She provides meals during the day and goes out to dinner with us at night. That's when she and the player talk about various topics that allow me to get to know him better, while I just sit back and listen.

Q So Jack, when are you really going to retire? And when you do, what are you going to do?

A I feel like I've been retired for most of my career. I loved teaching at La Crosse and I love the work I do now—neither have ever felt like



Professor Emeritus Jack Curtis leads a session with players from major league baseball's Philadelphia Phillies. He discussed topics dealing with confidence issues, stress, perfectionism, negative self-talk, goal setting and sleep issues.

work. I will continue doing what I'm doing as long as I enjoy it. I am at the top of my game with my experience and background, and still find it fulfilling. Fortunately, as a consultant, I have control of my schedule and work as much or as little as I want. Having recently moved to northern Wisconsin from La Crosse, we downhill and cross country ski daily during the winter, and fish, kayak and bike during the summer. Other than spring training, I only travel five to seven days a month, which provides me plenty of free time for those activities as well as time with our grandchildren. I kid my friends by telling them, "When I get old I'm going to take up golf ... but don't have time for it now."

Q I understand you continue to write. What's your latest project?

A Yes, I continue to write. I've always considered writing a hobby since I enjoy it so much. My most recent book is titled "Baseball's 6th Tool: The Inner Game." This book is written for professional players but is also appropriate for collegiate and high school players and coaches. It's available in book form at Amazon.com and as an e-book on Kindle. I'm currently working on a book for little league coaches and players and hope to publish it sometime in 2016.

‘Sleep squad’ studies bats, insects in the tropical forest

UW-L Assistant Professor of Biology Barrett Klein “tunneling,” a method of capturing bats in underground tunnels abandoned below Pipeline Road in Panama. The tunnel featured arachnids, insects, cold rain runoff ... and bats, notes Klein.

UW-L Professor Barrett Klein has heard the bats he studies are so clever that his research is doomed to fail.

“What greater impetus to prevail than to show that we can outwit a bat,” says Klein.

So every summer, Klein ventures into the tropical forests and underground tunnels of Panama with his team — the Bat Learning Insect Sleep Squad — to capture fringe-lipped bats and paper wasps in their native habitat. They bring them back to the flight chamber to study their sleep and wake cycles.

Klein and his team, including Smithsonian collaborators Rachel Page and William Wcislo, aim to understand the possible shared benefits of sleep in the two distantly related animals by restricting their sleep, testing their ability to learn and then releasing them.

Klein’s sleep research, which recently received a competitive \$26,000 Pell Grant, will lend insight into future studies on the age-old question of why organisms sleep.

“It’s really unknown territory — evolutionarily we don’t know the reason why we sleep,” says UW-L Danielle VanBrabant who analyzes videos of sleeping bats for Klein.

The research may also lend insight into sleep’s impact on human learning. Klein expects the animals’ ability to learn to decrease after they have experienced sleep loss, and the negative effects of sleep loss to be proportionately greater when subjects are faced with more complex tasks.

UW-L students VanBrabant, Elise Montesinos and Emily Ziegler have watched hundreds of hours of bats on infrared video in Klein’s lab as the animals sleep and groom themselves. Then, they analyze and record their behavior.

VanBrabant says the research suits her well as an animal lover who is curious about sleep. It’s her first time doing behavioral research, which she calls a team-building experience as she must communicate well and come to an agreement on what she is seeing. Klein says students collecting data is valuable not only for the experience they are getting.

“By having students collect data blindly, I won’t bias results with what I know about the individual bats and wasps,” says Klein.

In the future, he hopes to bring students to Panama with him to work directly with bats and wasps.

“This has really shown me that biology is such a diverse field,” says VanBrabant. “Studying one species of bat can expand the field and deepen our understanding of the natural world and ourselves.”

Klein says his research also investigates sleep in an evolutionary light. Instead of saying little about sleep patterns across a broad swath of organisms or a lot about only one well-studied organism, his research aims to make connections across two very distantly-related animals after testing them in similar experimental protocols.



The super team action portrait of BLISS — Bat Learning Insect Sleep Squad — a team assembled to probe the profound mysteries of sleep in animals ranging from mammals to insects. Backdrop: Bat flight cage mural by Diamond Kylo. From left are: Tawni Voyles (arms triumphantly raised), Clarice Diebold (on stairs), Bill Wcislo (hanging bat-style), Ashley Scuderi (on the run), Rachel Page (cerebral), Barrett Klein, Antoniya Hubancheva and Michelle Marie (on hands) in Gamboa, Panama.

SUM OF EXCELLENCE: UW-L MATH DEPARTMENT HONORED AS STATE'S BEST

The hall between offices of the UW-L Mathematics Department on the first floor of Cowley Hall is seldom quiet. At almost any given moment, you'll find two or more faculty members talking with one another. Sometimes it's about their weekend activities, but more often you'll hear conversations about their curriculum and how to better connect with students.

"I know that when I was a young teacher, much like our faculty is pretty young, I would come out of a class and say 'man, I gave a good lecture,'" says Jennifer Kosiak, a mathematics professor who received an award from the Regents in 2012. "Now, I turn to them and say 'So what? How do you know your students learned during that lecture?' So now we have that conversation of 'man, my students really got it today' and we can say 'well, how? What did you do in that classroom?'"

Similar discussions are just one small reason why the department is the UW System 2015 Regents Teaching Excellence Award recipient. It's the only department in the state to earn the honor. "It's not so much about being proud of winning the award," says Becky LeDocq, chair of the Math Department. "It's about being proud of what we do and what has gotten this award for us."

PREPARING STUDENTS FOR FUTURE CAREERS AND GRADUATE LEVEL EDUCATION

The Math Department is one of the lucky few on campus that touch the lives of just about every student. With few exceptions,

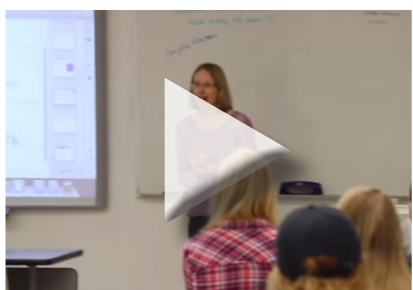
every student enrolls into some math course at some time.

Of those who choose to make a career out of math, about one-third are education majors. They take part in a program pioneered by faculty called the Secondary Teacher Education Preparation. It provides mentorship and support for students as they spend more than 100 hours teaching math in first through fifth grade classrooms.

SUPPORTING DIVERSE STUDENT NEEDS

A growing need for students to be tutored through math courses was answered through a tutoring center. The Murphy Learning Center was established by members of the Math Department and now serves several other departments. It also provides student tutors invaluable teaching experience. The center had 20,000 student visits during the 2013-14 school year.

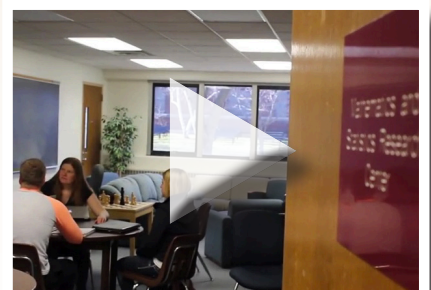
The department also developed a Fast-Track Mathematics program, where incoming freshmen develop math skills online for six weeks before meeting on campus. In the first two years, 73 of the 75 participating students moved forward into credit-bearing math classes, saving students and taxpayers money. There's also the Massive Open Online Course, or MOOC, which UW-L faculty and staff developed. It allows anyone in the world to become ready for college math.



CLICK TO WATCH:
MATH DEPT. WINS UW SYSTEM AWARD



CLICK TO WATCH: IMPROVING THE EQUATION



CLICK TO WATCH: BEYOND THE DIPLOMA

WORKING TOGETHER

For the past few years, the Math Department has found itself collaborating with others, including the Biology Department, which earned the same Board of Regents award in 2013. Together, the departments developed new curricula, programs and hired new faculty, including a professor specializing in mathematical biology.

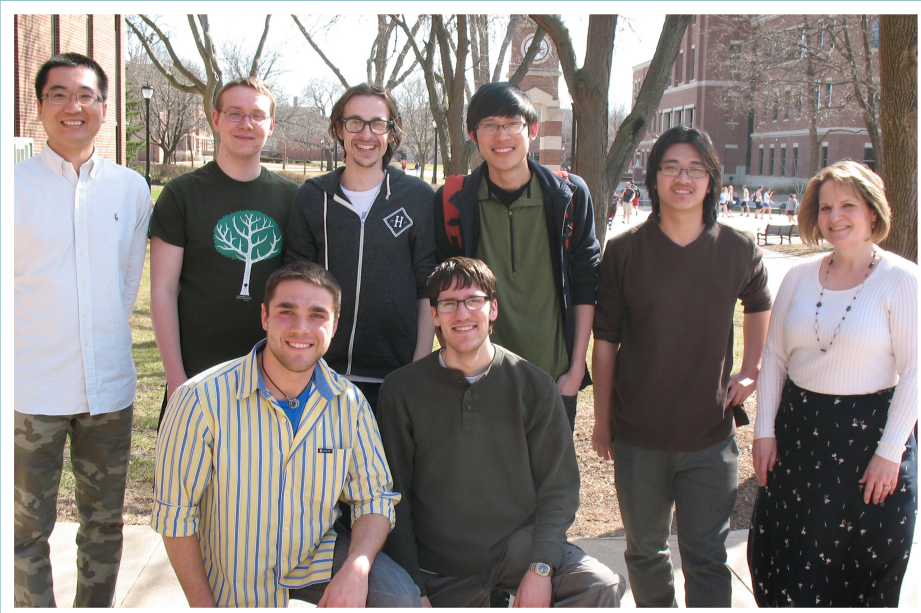
“To make progress you have to be collaborative; you can’t make a whole lot of progress if you’re not, or it would take you a really long time,” says Anita Baines, an associate professor of biology.

THINKING BEYOND THE DIPLOMA

The Math Department has seen a major increase in the number of students interested in undergraduate research. During the 2013-14 school year, there were more than 40 student presentations and publications. Compare that to an average of six a year between 2002 and 2005.

Some students are also getting hands-on work crunching numbers for faculty on campus and businesses off campus. The Statistical Consulting Center provides students the opportunity to work as real statistical consultants under a faculty member’s supervision. Along with the faculty research, the students helped with nine projects for local businesses, individuals and non-profits.

“A lot of our students actually say that this is an item on their resume that sets them apart,” says Barb Bennie, an associate professor of math working with the Statistical Consulting Center. “At their job interviews, the students get asked about working at the Statistical Consulting Center and are able to say they actually met with a client and helped answer their questions.”



The UW-L Math Department 75th William Lowell Putnam Mathematical Competition team included, from left, Huiya Yan, faculty coach; and participants Daniel Morrison, Anthony Mottaz, John Gallagher, Jacob Gloe, Thong Le, Lingxian Ye and Rebecca LeDocq, department chair.

Math students fare well in Putman competition

Competition in a tough North American math competition added up for six UW-L students.

Thong Le, Jacob Gloe, Lingxiao Ye, John Gallagher, Anthony Mottaz, and Daniel Morrison participated in the 75th William Lowell Putnam Mathematical Competition Dec. 6, 2014.

All six scored above the median test score and the UW-L team ranked 64 out of the 577 institutions. In addition, Le ranked 172 out of 4,320 participants. In the UW System, the only two other students to rank in the top 200 — the same tier as Le — were one student from UW-Madison and one from UW-Milwaukee.

In addition to the knowledge students gain in their courses, those competing participate in a weekly Putman practice with Associate Professor Huiya Yan, which he has held for the past several years. This is a common practice for students at schools that seriously compete in the competition and gives students insight into its nature. This year’s top two ranked teams came from MIT and Harvard.

The Putman is a competition for undergraduate students. Last December’s competition included 4,320 contestants from 577 U.S. and Canadian institutions. The test consists of 12 questions for which the students are given six hours to work. Each problem is worth 10 points. The most common scores on each problem are 10 points for complete solutions, nine points for near complete solutions, one point for some valuable work toward the solution and zero points for no progress. Strong mathematics students typically take the test, with the median total test score traditionally being zero points.



Article by
Susan Kelly,
Mathematics
Department

Program prepares lab professionals to meet national health care demand

UW-L senior Kayla Kuhn had a couple of job offers and recently accepted a position at St. Nicholas Hospital in Sheboygan, Wisconsin. The career prospects for someone in her field — Clinical Laboratory Science (CLS)— look good, she says. And, as a soon-to-be graduate of UW-L's program, the outlook is even better.

"Classes at UW-L are tough, but they're tough for a reason," she says. "UW-L's program has a very strong reputation of preparing students extremely well, so that alone has a significant impact in my career outlook."

UW-L's CLS undergraduate program prepares students for careers dedicated to helping physicians diagnose, monitor health and treat disease. While these professionals often work behind the scenes at clinics and hospitals, the information they provide is responsible for an estimated 70 percent of all medical decisions made by physicians.

Demand for these professionals is strong. Of the 32 students who completed UW-L's program in 2014, all found employment before or immediately after graduation.

UW-L's program, completed in partnership with hospitals in Wisconsin and Minnesota, as well as through the University of North Dakota, is growing to meet a high demand for lab professionals nationwide. The program had four students in 2000 compared to 30 today. Because of limited clinical sites where students spend their final year, the program is limited to 30 students, making the program very competitive.

While the program has grown in numbers, so has its reputation. UW-L students' pass rate on the national certification exam for the American Society of Clinical Pathology well exceeds the national average. In 2013, UW-L students' first time pass rate was 95 percent compared to a 78 percent nationwide pass rate. All graduates in the program's history have passed the certification exam.



Kayla Kuhn, a student in the Clinical Lab Science program, graduated in May 2015.

Students attending a Wisconsin clinical site also take a Medical Technology Pre-Clinical Comprehensive exam to gauge their preparation for the internship at the beginning of their clinical internship. UW-L students consistently score higher on this test than other Midwest institutions that feed these internship sites. Students typically hear about UW-L's program primarily through word-of-mouth or while taking their first semester microbiology course, explains Michael Lazzari, the program director. The salary and job prospects look good. Students can expect to have a starting salary of about \$50,000 and a job waiting for them after graduation.

The program is also attractive because of the talented microbiology, biology and chemistry faculty at UW-L, as well as instructors from hospitals who teach in their clinical program, notes Lazzari.

Kuhn was initially drawn to CLS because of her interest in microbiology. But she soon learned that the profession entails a broad spectrum of science from studying cells to gross anatomy. The variety intrigued her even more. Every patient case brings a new challenge, she says.

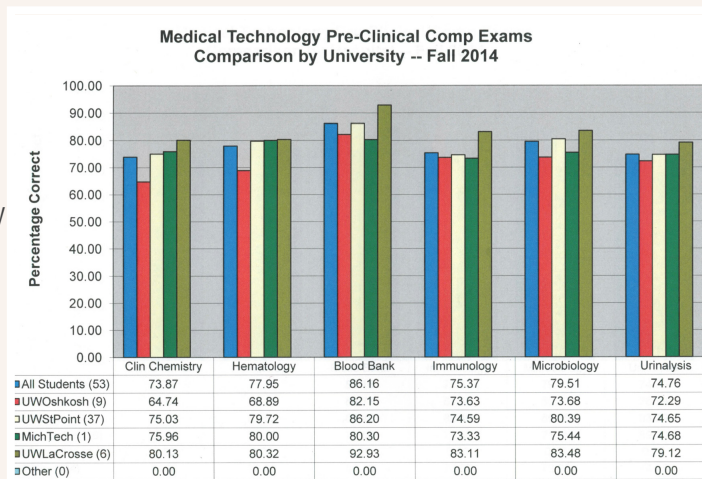
"I see every case as a puzzle," she says. "You get a specimen, do the test, find out what's wrong, meet with a physician and work to figure out the diagnosis and how to treat the patient."

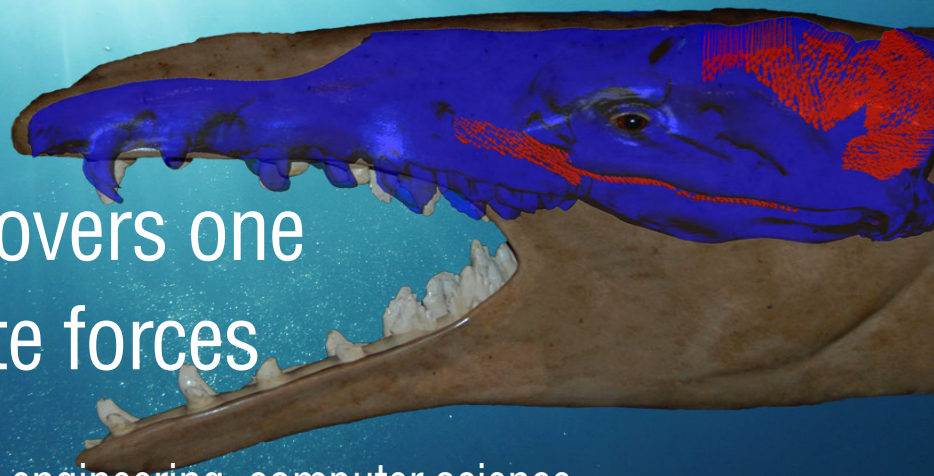
PROGRAM IS A COLLABORATIVE EFFORT

The UW-L CLS program's ability to remain strong in an ever-changing health care environment is in part because of strong ties with six clinical affiliates in Wisconsin, Minnesota and North Dakota, says Lazzari. The fourth year of the program is an internship at one of these sites. Learn more on the program website.



Michael Lazzari, CLS program director





UW-L research uncovers one of Earth's largest bite forces

Students researchers gain skills in engineering, computer science

It has the biggest bite force estimated for any mammal — ever.

Its jaws could crush bones with enough force to lift a Ford F150 extended cab.

Good thing it's extinct.

But Eric Snively, a paleontologist and UW-L assistant professor, is alive and well to tell all about the ancient whale, *Basilosaurus isis*, and its incredible ability to bite. His research on the bite force of the mammal that swam the world's oceans 34-40 million years ago was published in the scientific journal *PLOS ONE* in February.

Snively wrote the paper with co-authors Julia Fahlke, a postdoctoral fellow at the Museum of Natural History in Berlin, Germany and Robert Welsh, University of Michigan, whose scientists excavated and now curate the skull.

While the research gives scientists more clues about evolution of whales, it also gives UW-L student researchers practice for careers in medical and engineering fields.

Snively and his students analyze bite force using CT scans, virtual engineering models of the ancient whale skull and careful consideration of the animal's anatomy. The high tech computer software used in the lab is similar to what students will use in future careers. UW-L freshmen Ryan Sokup wants to one day be an orthopedic surgeon.

"Analyzing forces and stresses on bones and how they impact organisms is interesting to me and goes hand-in-hand with my future career plans," he says.

Sokup and Erin Wick are research assistants through UW-L's Eagle Apprenticeship program, which pairs freshmen with faculty mentors who provide them research or other assistantship experience. Sokup calls it "a unique chance to participate in meaningful research as an underclassmen." Such hands-on research and mentoring experience early in college is uncommon at many universities.

Wick is using the hands-on science to gauge her interest in different areas of the health sciences. "It is very interesting to work with these computer programs as the work done will

A *Basilosaurus isis* skull. The red represents muscle forces, and the blue color of the cranium shows that the skull has very low stress. The original life reconstruction in this image, by artist John Klausmeyer, is at the Museum of Paleontology, University of Michigan.

help my computer knowledge if I pursue my interest in echocardiography," she adds.

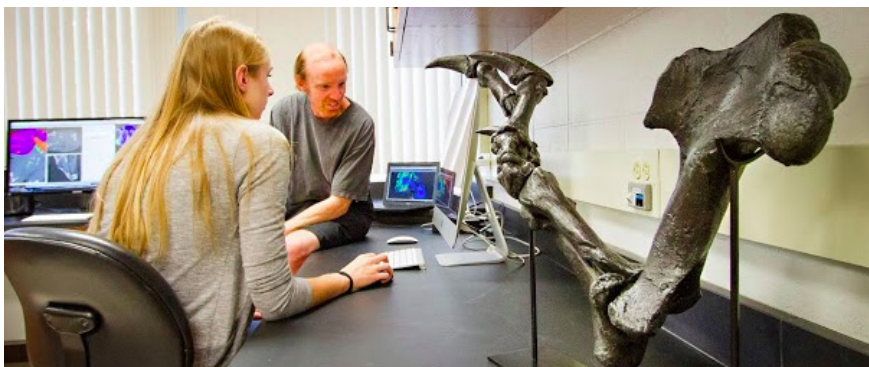
While students are excited about how the project prepares them for their future, they also share their professor's enthusiasm for the past.

"I mean, who doesn't think dinosaurs are awesome?," says Cody Fisher, a UW-L student who works on a separate project in Snively's lab.

Although not a dinosaur, *Basilosaurus* is justifiable in anyone's top 10 of extinct animals, adds Snively. An analysis of its bite force shows how whales succeeded at early stages adapting to water using their ability to bite. These ancient whales captured prey in their front teeth, and then crushed and sliced through bones. This set the stage for later evolution of predatory whales — including today's killer and sperm whales.

Hippos are likely to have the highest absolute bite force of any modern land mammal.

The paper is called "Bone-Breaking Bite Force of *Basilosaurus isis* (Mammalia, Cetacea) from the Late Eocene of Egypt Estimated by Finite Element Analysis." [Click here for link to paper.](#)



Assistant Professor Eric Snively in his lab where students assist him with various projects related to dinosaurs and other extinct animals.

UW-L PROVOST TEACHING EXCELLENCE WINNERS ANNOUNCED

The Provost's Teaching Excellence Awards were announced during commencement ceremonies Sunday, May 10. Students nominate faculty for the awards, which recognize and celebrate high quality teaching. This year's winners:

Edward Kim,

assistant professor, Mathematics teaches precalculus, calculus and topics in linear algebra. He has taught for two years at UW-L. After two years as a postdoctoral researcher, including one year at Delft in The Netherlands and one year in Pohang, South Korea, Kim was a lecturer for large calculus courses at University of California, Davis. He then came to UW-L.



Favorite part of teaching:

"While I really enjoy creating a fun and positive classroom atmosphere for learning, the biggest and best moments often occur outside the classroom. My favorite thing is seeing a student go from an 'I can't' mentality or an 'I'm just not a (fill in the blank) person' to an 'I can' mentality and saying 'I can totally do this!' As much as I enjoy seeing the light bulb go on for a student when a certain mathematical concept clicks, it is even more rewarding to witness a student using mathematics to empower themselves to say, 'If I can do this math, then I can do anything if I put in the work!'"

What one student had to say:

"I have never seen a professor care so much about what he does and put in so much effort into becoming a better teacher, adviser and colleague. I have noticed Dr. Kim spend many long hours holding office hours for students, developing new ways for students to learn better, and preparing unique and thorough lectures for his classes. He has personally shared with me some of his ideas for new ways to teach complex or confusing material to his students, and I have seen the excitement and enthusiasm he has for teaching."

Yevgeniya Turov,

teaches General Chemistry I lecture and lab and General Chemistry II lab. This is her third year at UW-L. Prior to teaching at UW-L, she was in a doctoral program in inorganic chemistry at UW-Madison. There she served as a teaching assistant for general chemistry and inorganic chemistry, and really enjoyed working with students as a TA. She was very excited to find a teaching position at UW-L.



Favorite part of teaching:

"My favorite part of teaching is showing students that things are logical and applicable to everyday problems. I love showing video clips of cool reactions and seeing the spark of enjoyment and learning and excitement that comes from seeing real concepts in action."

What one student had to say:

"Coming into my second year at UW-L, the class I was most nervous about taking was chemistry. Bad experiences with my high school chemistry teacher and not grasping the material made me nervous for this step up in chemistry. Dr. Turov was amazing in lecture. She had real world examples and kept everyone entertained by a mix of real world problem solving and videos. When it came to lab, Dr. Turov didn't waste her time or our time by feeding us information that we didn't necessarily need for an experiment to be successful. She helped me build my confidence back up in chemistry and taught me not to doubt myself. Dr. Turov didn't treat you like you were one in a crowd of students she teaches every week. She genuinely tried to get to know you as a student and understand how you learn best."

OTHER FACULTY EXCELLENCE WINNERS:

Ariel Beaujot, assistant professor, History
Terry Glenn Lilley, assistant professor, Women's, Gender and Sexuality Studies.
Nicole Gullekson, assistant professor, Management
Marie Moeller, assistant professor, English

COLLEGE'S OUTSTANDING SENIORS

The Strzelczyk Award in Science and Health

recognizes an outstanding senior in the College of Science and Health for academic achievement and service to the campus and community. Robert, a 1954 graduate, and Judy Strzelczyk endowed the award in 1996. Also, they have provided funding for physical therapy research projects, research equipment, student loans, and four full-time tuition scholarships. Recipients receive \$1,000.

EVAN GLASGOW graduated with a bachelor of science degree in Biochemistry and Biology with a Biomedical Science concentration and a minor in Mathematics. On campus, he was a General Chemistry tutor since 2012 and volunteered as a small group Bible study leader for InterVarsity Christian Fellowship. He participated in undergraduate research with Todd Weaver, Ph.D., investigating protein structure and function, and he spent a summer at Mayo Clinic training in x-ray crystallography with Dr. James Thompson. Evan will attend UW-Madison's Integrated Program in Biochemistry beginning in the fall to earn his Ph.D. degree. He hopes to use his passion for teaching and mentoring by becoming a professor. Among Evan's top scientific interests is researching new biochemical strategies for fighting antibiotic-resistant bacterial infections. He plans to integrate students into this research, and he aspires to be a lifelong advocate for quality education and accessible medicine.



The Murphy Awards for Academic Excellence

recognize the university's top two graduating scholars, as chosen by the Scholarship and Awards Committee. A grant from the Murphy Foundation created the awards in 1980. Marjorie P. Murphy, foundation president, cited a desire to recognize outstanding and exceptional scholastic ability. Recipients receive \$1,500 and \$1,000, respectively.

KALI KRAMOLIS graduated in December with degrees in Biology with a Biomedical Concentration and Spanish. Kali ran high hurdles for UW-L's track team for two years, was very involved in Pre-Medicine Club and Golden Key International Honor



Society, serving as Vice President for both, and helped coordinate campus's Anatomy Memorial Ceremony due to her role as a lab Teaching Assistant. She volunteered in Gundersen's Hem/Onc Infusion Center for three and a half years, coached Special Olympics, coordinated a weekly Bingo program at a local nursing home, was Student Director of the Salvation Army's Coats for Kids/Angel Tree Program, organized two blood drives and volunteered with hospice patients and at the Children's Museum. Kali also volunteered in Kenya, Costa Rica and Nicaragua with campus organizations and studied in Seville, Spain, for a semester. In 2013 she presented "Ca²⁺ Sensitivity (Characterization of Ion Channel Mutations) in Epileptic *Drosophila melanogaster* Populations" at the National Conference of Undergraduate Research.

Since graduation Kali has been working at ABLE, Inc., providing care for individuals with developmental disabilities, and at BrightStar Care as a Certified Nursing Assistant. Starting August she will attend the University of Wisconsin School of Medicine and Public Health to earn an MD/MPH dual degree. At this time, she plans to serve individuals with developmental disabilities and focus on impoverished populations as a physician. It is also a dream of hers to explore other cultures through Doctors Without Borders.

JACOB GLOE graduated with a bachelor of science in Computational Physics and Applied Mathematics this May. As an undergraduate, Jacob was the Secretary for the Mathematics and Statistics Club, a mathematics tutor in the Murphy Learning Center, and a private mathematics tutor. Additionally, he was also involved in the musical productions of Spring Awakening and The Drowsy Chaperone, and has competed in many rock climbing competitions throughout the University of Wisconsin system. Academically, Jacob has participated in several research and extra-curricular activities including Computational Astrophysics research, Mathematical Ecology and Numerical Analysis research, the COMAP and Putnam competitions, and math department colloquium talks. After graduation, Jacob will attend graduate school at the University of Wisconsin-Madison to pursue a Ph.D. in mathematics. He eventually hopes to become a professor in mathematics to teach undergraduate students and perform research.





YVONNE & MILT DATTA GIFT CHALLENGE

to support undergraduate research opportunities for students



Milt and Yvonne Datta

“I have such fond memories of my time in college. I want to give back to a place that helped me so much to grow as a person and in my overall life and career. I want young people to have the chance to have a similar experience I had with research.”

— Yvonne (Hauge) Datta, '82

Matching up to \$20,000

BETWEEN JULY 1, 2015-JUNE 30, 2016

I think undergraduate research really enhanced my undergraduate experience.

— Hunter Yanke, May 2015 Graduate



HELP MEET THE CHALLENGE
visit www.uwlax.edu/URC

You can make a difference:

In the College of Science and Health, 176 students received a research grant, fellowship or presented their work at the conference last year. Hundreds more were involved in actual research projects embedded into courses.