College of Science and Technology Notes

Dean’s Message

by John Katers
Dean, College of Science and Technology

What a remarkable first year it has been since the creation of the College of Science and Technology in July of 2016. As we continue to focus on people, programs and partnerships, tremendous progress has been made in all three areas. First, we have more talented people in CST, with this newsletter highlighting the faculty and staff that were added in the last year. These new faculty and staff were joined by more than 100 additional students, which increased the total enrollment in CST to over 1,000 students. The college continues to add new programs and emphases to meet the demands of these outstanding students, including a new MS in Athletic Training and an emphasis in microbiology, with approval also pending for an MS in Nutrition and Integrated Heath and a BS in Mechanical Engineering. We continue to forge partnerships in the community and across the globe in teaching, scholarship and service, which can be seen in articles on the recent move of Brown County and UW Extension staff to UW-Green Bay and the travel courses to Germany/Poland and Chile that were led by our faculty. I hope you enjoy this issue of our newsletter, while noting that there will be many more exciting changes to come in the next several months!

CST becomes the New Home to the Computer Science Program

Effective July 1, 2018, the Computer Science program will be joining CST. This change is being made to better align the computer science program with the long-term plans of the university, CST, and the region. The Computer Science program has strengths in a number of areas including cybersecurity and gaming, and the move to CST will provide additional opportunities to collaborate with the engineering technology and mathematics programs.
UW-Green Bay Associate Dean Amanda Nelson and Associate Prof. Uwe Pott (Human Biology) guided a team of 18 students in the pre-health professions to Poland and Germany including a four-day workshop at the famous Plastinari-um in Guben, Germany, which is the home of the “Body Worlds” exhibits. Plastination is a scientific method of preserving tissue and vital organs for anatomical display.

“For those interested in human anatomy, the place to be is Guben, Germany,” said UW-Green Bay student Lyddia Calmes. “This hands-on workshop was a once-in-a-lifetime experience that truly provided us with knowledge to last a lifetime. The amazing staff walked us through every step of the Plastination process and left no question unanswered. I would fully recommend this experience to anyone considering a career in healthcare. Personally, this unique trip will be a wonderful interview talking point when trying to differentiate myself from other applicants while applying to Pharmacy school next year. Overall, I am extremely grateful for this opportunity of study within my field while also being able to experience new sights and cultures. Thank you to those who helped make this trip happen!”

The group stayed overnight in Krakow and Gubin, Poland and Berlin, Germany. They also toured Auschwitz and Auschwitz-Birkenau.

“No amount of experimentation can ever prove me right; a single experiment can prove me wrong.” Albert Einstein

Student-Nominated Teaching Award Winner

Assistant Professor Megan Olson Hunt (Mathematics) was selected as the winner of the Early Career student-nominated teaching award for 2017.

Natural and Applied Sciences Fall Seminar Series Schedule

The Natural and Applied Science Fall 2017 Seminar Series began on September 15th. NAS seminars are held from 3:30 to 4:30 pm in Environmental Services, Room 301 and are preceded by a social in Room 317F from 3 pm to 3:30 pm. Seminars are free and open to the public.

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<tr>
<th>Date</th>
<th>Speaker</th>
<th>Title/topic</th>
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<tr>
<td>09/15</td>
<td>Steve Deckelman, Professor, Dept. of Mathematics, Statistics &amp; Computer Science, UW-Stout</td>
<td>“Mathematics and Physical Reasoning”</td>
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<td>09/29</td>
<td>Wes Larson, Asst. Unit Leader, USGS, Wisc. Cooperative Fishery Research Unit, UW-Stevens Point</td>
<td>“The importance of preserving adaptive genetic diversity: lessons from Pacific salmon and applications to Great Lakes fishes”</td>
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<td>10/13</td>
<td>Mark Borchardt, Microbiologist, Environmentally Integrated Dairy Management Research, USDA</td>
<td>“Dairy Manure and Human Wastewater Contamination in the Dolomite Aquifer in Northeastern Wisconsin”</td>
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<td>10/27</td>
<td>Matt Stoneking, Prof. of Physics, Lawrence University</td>
<td>“The Stellarator: A Twisted Approach to Controlled Nuclear Fusion for Energy Production”</td>
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<td>11/10</td>
<td>Ed Verhamme, Project Engineer, Limno Tech, Ann Arbor, MI</td>
<td>“Modeling the Great Lakes”</td>
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<td>12/08</td>
<td>Wes Schroeder, Adjunct Engineering Instructor, UWGB</td>
<td>“Problem Based Learning Applied to Electrical Engineering”</td>
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Welcome New Faculty

Mandeep Bakshi
Assistant Professor
Chemistry
PhD: Panjab University, Chandigarh, India

Douglas Brusich
Assistant Professor
Human Biology
PhD: University of Iowa

Mark Norfleet
Assistant Professor
Mathematics
PhD: University of Texas at Austin

Grants at Work

- John Arendt and Kevin Fermanich were awarded $18,965 for the “Lower Fox Perennial Forage Project” sponsored by the Alliance for the Great Lakes.

- John Arendt and Kevin Fermanich were awarded $36,640 for “Improving Water Quality through Sustained Stakeholder Engagement and Collaborative Watershed Projects to Reduce Nutrients in the Lower Fox River and Green Bay Watershed” sponsored by the Alliance for the Great Lakes.

- Ryan Holzem was awarded $2,420 by NEW Water for “Determination of the optimal coagulant and polymer doses for chemical phosphorus removal in the plant effluent at the NEW Water Green Bay Facility”.

- Patrick Forsythe was awarded $23,000 from the Cofrin funds for the purchase of a boat, motor and trailer to allow for the expansion of the fisheries research in the College of Science and Technology.

- Ryan Holzem was awarded $14,201 by the DRAMM Corporation for “Phase I: Characterization of liquid fish fertilizer produced by DRAMM Corporation, and comparison with competitors.”

- Amy Wolf was awarded $60,000 from the Greater Milwaukee Foundation for the “Construction of a Coastal Wetland”.

- Robert Howe was awarded $118,014 from the WI Department of Natural Resources for “UWGB Facilitating Adaptive Management Phragmites”.

- Patrick Forsythe was awarded $54,453 from the US Fish & Wildlife Service and $30,000 from the WI Department of Natural Resources for “Proportional Contribution of River & Reef Spawned Lake Whitefish”.

- Assistant Research Scientist Chris Houghton was awarded $160,000 by UW Sea Grant for a two year research project beginning in 2019. The project will map the benthic invertebrate community of Green Bay to compare the current community with historical records. It will also assess the effect of seasonal hypoxia on benthic invertebrates. The grant includes funding for a new Master’s degree student in Public and Environmental Affairs, undergraduate research technicians, and will extend collaborations with researchers from Texas A&M and UW-Milwaukee.
Welcome New Staff

Molly Meyers
Agricultural Outreach & Research Coordinator
EMBI
MS: UW-Green Bay

Laura Rowell
Dietetic Internship Program Director
Human Biology
MS: Cardinal Stritch University

Kelly Wilhelm
Lecturer
Geoscience (NAS)
PhD: University of WI-Madison

Faculty Recognition/Achievements

Professor Michael Draney (Biology) was featured in an hour-long segment on Wisconsin Public Radio’s Joy Cardin Show. He discussed his expertise in spiders and the new study that reports spiders worldwide eat 400 to 800 million tons of insects per year. That is the equivalent weight of 85 million elephants. Listen to the piece Credit Spiders for Being Nature’s Pest Control or read the blog post about it.

A photograph taken by Professor Dan Meinhardt (Human Biology, Women’s and Gender Studies) has been accepted into an exhibition called Art of Water at the James May Gallery in Algoma. The exhibition ran from May 4 to 29, 2017.

Congratulations to Associate Professor Debra Pearson (Human Biology), who was honored with the Outstanding Dietetics Educator of the Year Award at the Wisconsin Academy of Nutrition and Dietetics Association Annual Conference. The award recognizes an outstanding educator for innovation in teaching skill and technique, mentoring of students, and leadership in education and dietetics/nutrition sciences.

Assistant Professor Md Maruf Hossain (Engineering Technology) had his patent application “Wind Generator System with Multiple Turbines” with Assistant Professor Hasan Ali (University of Memphis) accepted on March 21, 2017 with 14 claims (United States Patent # 9,599,092).

Herbert Fisk Johnson Professorship in Environmental Studies — Prof. Amy Wolf The Herbert Fisk Johnson Professorship in Environmental Studies was established in 1985 by Samuel C. Johnson and his wife, Imogene Johnson of Racine. It is named in honor of his father. Herbert Fisk Johnson was the grandson of Samuel Curtis Johnson, founder of Johnson Wax Company. He led the company to its present position as a world leader in the manufacture and marketing of wax, wax products and other products produced by the company. Samuel and Imogene Johnson were among the early supporters of UW-Green Bay and remained friends of the University over the years. Samuel passed away in 2004. The award recognizes and gives support for a full professor who has demonstrated a productive commitment to scholarship and outreach and whose work exemplifies the spirit and mission of the University. The Johnson Professorship is designated for the areas of biological or physical environmental studies or policy studies of environmental issues.

In July 2017, Assistant Professor Tetyana Malysheva successfully completed a fellowship year as a 2016-2017 Mathematical Association of America (MAA) Project NExT fellow.

MAA Project NExT is a national premier professional development program for college-level faculty in mathematical sciences. It focuses on new experiences in teaching mathematics, scholarship of teaching and learning and professional service.

Three UW-Green Bay researchers Professor Robert Howe (Biology), Cofrin Center for Biodiversity Center Research Specialist Erin Giese, and a recent ES&P graduate, Nick Walton are part of a team that has been recognized by two national awards for the publication of a peer-reviewed USDA Technical Report on monitoring bird populations in western Great Lakes forests. Awards include the U.S. Forest Service Award and the Partners in Flight Award.

Congratulations to CST 2017 Founders Award Winners!

University Staff Award for Excellence: Janet Ludke

University Award for Excellence in Collaborative Achievement: Vicki Medland

Faculty Award for Excellence in Scholarship: Robert Howe

“It’s not a faith in technology, it’s a faith in people.”
— Steve Jobs
Faculty Publications

- Professors Amy Wolf and Bob Howe, (Biology) who had their work published in Science, (June 30, 2017) the premiere scientific journal in the world (along with the British counterpart Nature). The work involves a collaboration that includes their research at the Wabikon Forest Dynamics Plot in northern Wisconsin. Read Plant diversity increases with the strength of negative density dependence at the global scale and see the related commentary: How latitude affects biotic interactions (Comita 2017, Science); Global forest network cracks the case of tropical biodiversity (Washington University in St. Louis): Is this the long-sought answer to the question of tropical biodiversity? (Smithsonian News Desk)

- Assistant Professor Ryan Currier and Associate Professor Patrick Forsythe (Natural and Applied Sciences) have published an article with former students Corinne Grossmeier, Michael Laliberte and Brian Yagle. “Experiments on the evolution of laccalith morphology in plan-view” presents the results and implications of experiments performed by students in the Fall 2013 Capstone in Environmental Science course, where students simulated the intrusion of magma in the shallow earth by injecting molten wax into layered gelatin. The findings provide an updated model for the growth of shallow intrusions and allow for the prediction of hidden magmatic plumbing based on the shape of an intrusion.

- Professor John Luczaj (Geology, Natural & Applied Sciences) is a co-author of a recent peer-reviewed work. “Groundwater Management Area, Wisconsin, USA: A Century of Groundwater Use,” published in the journal Geosciences in March 2017. The article is culmination of 10 years of researching the water levels in the deep sandstone aquifer beneath Green Bay and the Fox Cities.


- Assistant Professor Georgette Heyman (Human Biology) recently coauthored and published an article with Alexandria N. Young-College of Pharmacy, University of Illinois at Chicago. Julie Kim-Feinberg School of Medicine, Northwestern University, Chicago and Joanna E. Burdette-College of Pharmacy, University of Illinois at Chicago titled “Microphysiologic Systems in Female Reproductive Biology” which discusses existing microphysiologic systems technology that may be applied to study of the female reproductive tract, and those currently in development to specifically investigate gametes, fertilization, embryo development, pregnancy, and diseases of the female reproductive tract. We focus on the clinical applicability of these new technologies in fields such as assisted reproductive technologies, drug testing, disease diagnostics, and personalized medicine.

- Assistant Professor Lisa Grubisha (Biology) recently co-authored two publications. “Increased phylogenetic resolution within the ecologically important Rhizopogon subgenus Amyloporus using 10 anonymous nuclear loci” was published in the journal Mycologia in March 2017. The paper “Development of Anonymous Nuclear Loci for Pterospora andromedea (Monotropoideae) Using Illumina and Ion Torrent Sequencing Data” was published online early in Conservation Genetic Resources in February 2017.


- Assistant Professor Karen Stahlheber (Biology) co-authored a paper entitled “Livestock Exclusion Impacts on Oak Savanna Habitats—Differential Responses of Understory and Open Habitats” that was published in the Journal of *Rangeland Ecology and Management* in May 2017.

- Assistant Professor Mandep Singh Bakshi’s (Natural and Applied Sciences) perspective is published in "Chemical Research in Toxicology" (ACS journal). Nanotoxicity in Systemic Circulation and Wound Healing is related to the recent advances in nanomedicine and nanobiotechnology where functional nanomaterials are used as drug delivery vehicles in systemic circulation. A variety of nanomaterials are potentially cytotoxic in the living system and hence, their nanotoxicity is an essential aspect to be discussed. This account highlights the nanotoxic effects of nanomaterials proposed to use in nanomedicine.

- See more faculty publications at uwgb.edu/cst/our-people/faculty-publications/
UW-Green Bay Celebrated First-ever Engineering Technology Graduates on Saturday, May 13, 2017

On Saturday, May 13, 2017, four engineering technology students were the first to graduate from the Engineering Technology program at UW-Green Bay. The program started in the fall of 2015 with around 30 students enrolling at that time. According to Dean John Katers, that number has jumped to 120 in the fall of 2016 and most recently has 132 students enrolled. He says, “The program is continuing to grow and the community has really been interested in this and they’re looking for talent in these fields, so the more students we can get in to the program, the better we can serve the needs of our community.” One of the key components to the program is internships, which gives the students the opportunity to get out and work directly with the manufacturers. Dean Katers feels that once the manufacturers see the quality of the students graduating from these programs, there will be more of them hiring the students on at the end of the internship.

“A science which hesitates to forget its founders is lost.” Alfred North Whitehead

Chile—Sustainability and Water Resources

Dean John Katers and Associate Dean Mike Zorn accompanied 15 students from the MSMGT program on a travel course to Chile in August. They traveled to Santiago, Chile, and experienced a range of educational and cultural experiences done in conjunction with our partners at the Universidad del Desarrollo (UDD). The itinerary included a visit to the landfill that serves much of Santiago, a visit to UDD to learn about innovation, environmental sensors, among other things, and how they can be applied to local environmental problems. There was also a visit to two sustainable vineyards, a copper foundry, a visit to the Yeso Dam, which is the source of drinking water for Santiago and a visit to Valparaiso, a Unesco World Heritage site. Dean Katers and Associate Dean Zorn, as well as several MSMGT students, also spoke at the Green Innovation Conference which was hosted by UDD.

UW-Extension/ Brown County Make the Move to Campus

Over 15 employees from the UW-Extension’s Agriculture, UW-Discovery Farms and the Brown County Land and Conservation office made the move to the UW-GB Campus in May. They have offices on the first and third floors of the Environmental Sciences building (ES 107 & ES 307) and in the Facilities Management building (102). Other employees have moved into space at the Neville Museum. The former UW-Extension building in Bellevue was sold to the Green Bay Area Public School District. Upon completion of the STEM Innovation Center (see next page), this will become the new home for these programs.

Barbara & Benjamin Cruz-Uribe Create a New Scholarship

In recognition for all that the university has given to their family, Barb and Ben Cruz-Uribe have created an endowed scholarship to aid students in the study and research of environmental issues, especially those that are directly and indirectly affected by global warming/climate change. The purpose of this scholarship is to continue to aid students to help achieve that goal. Students interested in applying should go to www.uwgb.edu/nas/scholarships/descriptions.

“Barbara & Benjamin Cruz-Uribe Create a New Scholarship”
Science Open House

The Fall 2017 Science Open House was held on Friday, November 3rd. Over 130 guests (87 high school students) attended the event, which included a resource fair, breakout sessions, and a tour of the science facilities. In addition to 30 CST faculty/staff and 50 UWGB students, Steve Kuchenberg (Cherney Microbiological Services, Ltd.), Josh Kaurich (MEP Solutions), and Kait Rauen (Schreiber Foods) participated in the open house. Following Dean Katers’ closing remarks, guests were invited to attend Mark Fralick’s WhereWerks Product Launch. Mark is a 1982 UWGB graduate with a degree in Business Administration and a dual emphasis in Communication and Computer Science. In the 1990’s, he co-founded Software Architects Inc., a software company that specialized in Warehouse Management Systems (WMS). After selling Software Architects, Fralick went on to create another WMS technology space, called Get Us ROI, which as of 2015, was among the top 1000 fastest growing companies in the US. He came back to his Phoenix family to tape a video to launch a new product with his new organization, WhereWerks. Alumni like Mark represent the best of a UW-Green Bay education. He is the Wisconsin idea in action….a graduate who is leading innovation and interested in building partnerships with our campus and our students.

New Engineering School and STEM Innovation Center Planned for UW-Green Bay

The state budget included a provision allowing UWGB to establish a School of Engineering that would be housed in CST. The School of Engineering would initially include the three current engineering technology programs, as well as the proposed program in mechanical engineering. The review and approval of the proposals for the School of Engineering and the Mechanical Engineering program by the Board of Regents is scheduled for February. The state budget also contained $5 million for a STEM Innovation Center to be constructed on the UWGB campus near the Laboratory Sciences building. Upon completion, the STEM Innovation Center would include space for staff from Brown County Land and Water Conservation, the Einstein Project, UW Extension and the UWGB Mechanical Engineering program. This would be the first new academic building on the UWGB campus in nearly 20 years and will serve as the center of activity for science related programming in the community.

UWGB’s Fleet of Research Boats

Over the past 7 years, UWGB has acquired a fleet of research boats. They have each been affectionately named R/V Phoenix I, II, III, IV (R/V stands for Research Vessel). Each boat performs a different function for the Aquatic Ecology and Fisheries Laboratory and has been designed for portability and safety while conducting research. R/V Phoenix I is a 25 foot Boston Whaler with twin 150 hp Mercury outboard motors. R/V Phoenix II and III are 20-foot flat bottom welding type plate boats with 90 hp motors. R/V Phoenix IV is a 16-foot flat bottom plate boat that has been retrofitted for electrofishing capability. UWGB’s boats are also suited for sampling different aquatic environments including lakes, ponds, rivers and the open waters of Green Bay and Lake Michigan. The funds used to purchase and maintain UWGB’s research vessels have come from non-tuition based campus revenue, the 1923 Fund, internal laboratory modernization grants, and externally funded research related grants submitted to state, federal and private organizations. Students interested in a career in aquatic and fisheries science should seek to contact Dr. Patrick Forsythe at forsythp@uwgb.edu.
Meet Dr. Amy Wolf (1993), Chair of Biology

Dr. Amy Wolf is Chair of Biology and a 1993 UWGB graduate. Amy is an outstanding teacher, having received the student nominated teaching award in 2010. She is also an accomplished scholar (Founders Award for Research in 2014) and was recently named to the Herbert Fisk Johnson Professorship for a five-year term effective July 1, 2017. She teaches courses in general ecology and conservation biology, and mentors many undergraduate and graduate student researchers. She also works with students, staff, and other faculty on research projects varying from forest ecology to wetland restoration to the ecology of native bees and endangered plant species.

A short video on Dr. Amy Wolf can be found at http://www.uwgb.edu/biology/faculty-staff/wolfa/.