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State-of-the-Art Confocal Microscope Changes Research at WMU

Western Michigan University, Biological Imaging Center director, Dr. Rob Eversole helped the Department of Biological Sciences acquire a new microscope that in a short period of time has already enhanced and changed the way WMU conducts research. The Nikon C2 confocal microscope was installed in Oct. 2014 and stands to provide numerous grant opportunities for WMU due to its advanced capabilities.

WMU graduate student Darcy Trimpe has already benefited from the new confocal microscope in conducting her research on the neurogenesis and cell death in the olfactory bulb of the adult zebrafish. Trimpe was previously driving to the Van Andel Research Institute in Grand Rapids, the closest facility to Kalamazoo with access to a confocal microscope that offered the enhanced capabilities of the Nikon C2. Now that Trimpe is able to study her tissue specimens on campus, she is able to focus more of her time researching possible mechanisms by which neuronal cells in the zebrafish brain regenerate, with the goal of understanding the process of cell regeneration in the human brain.

In addition to Trimpe's research, several other lab projects are utilizing the confocal microscope for its ability to conduct time-lapse experiments, image larger specimens in 3D and accept cell cultures. The confocal method increases optical resolution and contrast and eliminates areas that aren’t in focus. The new instrument is particularly capable in rendering multicolored fluorescently labeled specimens with minimal operator training time.

Biological sciences graduate students and faculty are primarily using this new equipment, but according to Eversole because the microscope is so versatile, the potential for collaboration with the wider scientific community is much greater. Eversole is also mindful that this equipment, which is excellent for biological imaging, could bring in grants by collecting data for others, including local industrial companies. This includes a new collaboration with Metabolic Solutions Development Company in Kalamazoo. There are already $3.6 million in existing university grants and another $4 million pending.

While Eversole took lead on acquiring the new microscope, he is grateful to the College of Arts and Sciences, the Office of the Vice President for Research, Lee Honors College, the Department of Biological Sciences and several individual scientists for their support and financial contributions, which were vital. This single piece of technology will not only give WMU students a unique research experience, but will also increase the ability for departments to collaborate while increasing WMU’s visibility for being a research institution.

WMU Hosts Second Michigan Autism Conference

Western Michigan University’s Department of Psychology hosted the second annual Michigan Autism Conference and expectations were exceeded by both participants and the planning committee. During the first year, which was considered successful, there were 270 registrants. In 2014, the number of attendees and speakers jumped to 480! Educators and researchers from Michigan, California,
Massachusetts, Ohio, Illinois, and Indiana converged in Kalamazoo, Mich., to discuss autism topics related to Michigan legislation and services in the state.

Dr. Jessica Frieder, WMU professor of psychology and coordinator of the conference notes that WMU has the premier institution for behavior analysis and views this conference as a way to bring high-caliber educational opportunities to the state of Michigan for practitioners, researchers and parents of autistic children. "Understanding that professionals and families are bombarded with information on possible interventions, the largest mission of the Michigan Autism Conference is to support education in an accessible manner," Frieder said.

In addition to providing great opportunities for educators and experts to collaborate in Kalamazoo, Frieder expressed the value of WMU hosting the conference as it relates to alumni and current students. Frieder stated, "Alumni love to return. They come to the conference and are proud." Graduate students also benefit as the conference "brought the classroom to life. They got to hear from the people who write the books they are reading." The educational value extended outside of the classroom as graduate ambassadors served as assistants to conference speakers and several speakers attended poster ceremonies for students.

When asked about planning for next year's conference—Oct. 7 through 9, 2015—Frieder plans to incorporate more mainstream topics that will focus on children and advocacy for transition, implement more sessions for medical practitioners and offer more resources for parents. Please visit the WMU Department of Psychology for details on the program and visit Michigan Autism Conference for information on next year's conference.

Physics Professor Awarded $150,000 NSF Grant

Atomic physics can be used to study atoms in isolation, and atomic collision physics can be used to study the way in which electrons interact. A process of particular interest is what happens when two electrons are transferred to a projectile in a collision and a single photon (a quantum of light) is liberated. The inverse of this process occurs when two electrons are liberated by a single photon. These processes tell us about how electrons "talk" with one another. Western Michigan University is one of a few places in the world where this research can be attempted due to the presence of the tandem Van de Graaff accelerator. With the accelerator and expertise of physics professor, Dr. John Tanis, the National Science Foundation has awarded a $150,000 grant to WMU to create ideal scenarios for scientists to actually view this fundamental process.

Several experiments have been conducted to observe this process, but only one has been successful. In 2009, the first successful measurement of this phenomenon was conducted at WMU with Tanis and then student, Anna Simon, from Krakow, Poland who spent six months in the WMU lab. Following the successful measurement, Tanis went to Germany in 2011 to collaborate with other top researchers, but were extremely limited by time and they were not able to produce the desired results.
Tanis believes that he will be able to get clear results at WMU because the accelerator gives him the time to conduct the research and because the accelerator allows the research to take place in a gas chamber. Tanis is interested in understanding the fundamentals of the process and knows that others will be interested in seeing the results because other scientists, including astrophysicists, will be able to see the time reverse of the process which is double ionization by a single photon.

Tanis has been active in the field of atomic collision physics, investigating fundamental interactions that occur in collisions between atomic particles for more than thirty years. He probes the dynamics and associated structural aspects of collisions between few-electron projectiles and atomic or molecular targets. This work is carried out, with several collaborators, at WMU and at other laboratories, nationally and internationally. In addition to his research being supported by the NSF, Tanis has also been supported by the U.S. Department of Energy for more than 20 years.

A Campus Love Story: Marisa & Brandon

*Posted on Wednesday, November 5, 2014*

Many WMU alumni meet their spouses as students on campus, and Marisa Schomisch (BA '09, Social Psychology) and Brandon Marsh (BA '09, Film, Video, & Media Studies) are no different. Recently married in Kalamazoo—October 18 to be exact—the couple met, had their first date, and fell in love at WMU seven and half years ago.

Schomisch and Marsh were both transfer students, looking for a school in Michigan with great programs. They both ended up at WMU in Hoekje Hall and both were involved on campus. Living in the same residence hall, the two saw each other frequently and finally met, officially, at St. Patty’s Day party hosted by Hoekje. Some friends helped to set them up for the first date—a Bronco Hockey game.

"We both loved hockey and were able to go with friends who set us up on a date,” Schomisch said. "It was so fun, all the cheering and screaming; by the end of the game we had no voices!"

Their story extends to another area of campus, the perfect spot for enjoying a view of downtown Kalamazoo. East Hall was the gathering place for couples after parties, and Schomisch and Marsh this is where they fell in love.

"It was a good place to go and talk and hang out,” Marsh said, “we are still looking for something similar in Baltimore.”

Although the couple no longer lives in the area, their October 18 wedding took place in downtown Kalamazoo, and included a photo session around campus. The music at their reception was even played by a WMU student group, the Warren Oja trio.
The day after their wedding, Schomisch and Marsh ventured back to campus to see the new Sangren Hall and other more recent changes. They also stopped at the bookstore to load up on Bronco gear.

“My favorite memory from WMU was sitting on the steps behind the Bronco Mall and having our dorm picnic after finals. We played volleyball, he skateboarded, and we ate a ton!” Schomisch recollected. “It was fun to do before having to go pack up our dorms and say goodbye for the summer. That would have been summer 2007.”

Marisa Schomisch is currently a teacher at The Calvert School and Brandon Marsh works at AOL as an interactive designer. They live in Baltimore, Maryland.

**Victim Advocate Assistant Arica Nelson**

DJ DeLong
Creative writing and history major
College of Arts and Sciences, Marketing and Communication student employee

Many students wonder about what they will find on the other side of graduation, especially with a job market that is consistently fluctuating. Will they automatically start working their dream job? Or will they have to find other means to pay off college debt? Others wonder if they even went into the right career field. Some ask, "I have my degree, now what?"

Arica Nelson can be the example to calm the fears of current students. Nelson, Western Michigan University alumna and current graduate student, is a victim advocate assistant for the District Court Division of Kalamazoo County. Nelson graduated from WMU in 2013 with a bachelor’s degree in criminal justice. Only a year after receiving her degree she is working in the career field she dreamed of and continuing her academic career by pursuing her master’s degree in public administration. Nelson shows current students that the right opportunity could be right around the corner or even found while still attending WMU.

When asked how WMU helped prepare her for her career as a victim advocate assistant, Nelson said, "Professor Felix Brooks specifically helped me the most. He connected everything we learned to real life situations. I learn best by application and he did just that for me."

Her internship was also one of the biggest helps for Nelson during her college career. The office she works in now is where she had her internship. To Nelson, it seemed the most interesting on a list of places that needed interns. She had no idea that she would fall in love with the work and start a
career there. Nelson comments, "It is a very stressful and tense unit to work in, but it is much more rewarding than it is stressful."

Nelson is one of many WMU students who are out in the workforce making a difference in the world. She shared the most influential case she has worked on, a criminal sexual abuse case of a special needs child. "She was the sweetest little girl I have ever met in my entire life," Nelson said. It was a stressful case and the entire office was extremely tense about how the case was going to go. When the young girl had finished testifying, she ran back up to the Victim/Witness Unit and screamed, "I did it! I'm a survivor!"

Nelson and others in her office do their jobs for those who need help, like this little girl. Nelson said, "She didn't know it, but she made us realize again why we do what we do. That was the case that showed me that I am in the right career field."

Full Circle
Posted on Wednesday, November 12, 2014

Abstract painter Mark Olson’s (BS ’93; MS ’95, Applied Mathematics) work will be on display in the College of Health and Human Services second floor art gallery now through mid-December.

Olson is a self taught artist with a diverse background. After graduating from Western Michigan University with a Masters degree, he worked as a software engineer. He then co-founded an information technology consulting company in West Michigan and also a coaching and training company focused on helping athletes and health-conscious people reach their fitness goals.

Olson had a strong interest in abstract art throughout his life but did not explore “being an artist” until his late 30’s. He then taught himself to paint, researching artists such as Pollack, Rothko, Kline, and Richter—and setting up a studio in his dining room. This simple beginning quickly escalated into an intense need to paint, and paint, and paint.

About his painting Olson says, "My work is inspired from three different sources: nature, mathematics and what I call a mindscape. From nature and mathematics come colors, structures and order; and from mindscapes come layers and arrangements of chaos and randomness.” Except for commissioned works, Olson’s goal is not to represent anything visually recognizable but to paint until the work looks complete.

Olson’s work hangs in residential and business sites throughout Michigan, and he has shown work at the Mid-Town gallery in downtown Kalamazoo and at numerous Kalamazoo businesses with the Arts Council of Greater Kalamazoo’s Art Hop. Also, one of his works was selected for the Kalamazoo Institute of Art for the prestigious South West Michigan Artist Show in 2013.
A reception that is free and open to the public is scheduled for Tuesday, December 2 from 4-6 p.m. in the gallery. Parking will be free in lot 104 for the reception.

The public is also invited to view the exhibit through December 18, Monday through Thursday from 8 a.m. to 9 p.m., and Friday and Saturday from 8 to 5 p.m. For more information, contact Gay Walker at gay.walker@wmich.edu or (269) 387-3839.

**Kathryn Hemmen Reflects on Semester in Japan**

**DJ DeLong**  
Creative writing and history major  
College of Arts and Sciences, Marketing and Communications student employee

With over 90 study abroad programs available in more than 40 countries, there is bound to be a learning experience for any student at Western Michigan University. The College of Arts and Sciences tries to assist students with the expenses of study abroad by offering the CAS International Study Scholarship. This scholarship offers up to $1000 based on need and merit to any CAS student.

Senior Kathryn Hemmen received a CAS International Study Scholarship to study in Hikone, Shiga for the spring 2014 semester. She is finishing up her studies with a double major in global and international studies and Japanese, along with a minor in music. While in Japan, she learned firsthand about many Japanese traditions from her host family. In fact, the “one-grain of rice philosophy” became Hemmen’s motto throughout the trip. This philosophy was shown to her by her host father and taught her that in Japanese culture every grain of rice, every person, is important.

Hemmen’s decision to go to Japan for study abroad was influenced by a book given to her by her aunt at her high school graduation. "A Day in the Life of Japan," is a large picture book of Japan that spurred a million questions and an adventurous spirit. She began to seriously study Japanese language and culture. After two years at WMU, she decided it was time to apply to study abroad. Hemmen said, "Although the process was rocky, my dreams came true in January and I saw all those pictures come to life."

Study abroad can lead a student anywhere, even to WMU alumni. While in Japan, Hemmen met with Shay VanMeter '12. VanMeter provided Hemmen with good advice for job-hunting in Japan. This will help Hemmen greatly after she graduates as she plans to teach abroad in Japan for a few years in order to improve her language skills and develop stronger intercultural communication skills. "My study abroad experience has heavily influenced my passion to return to Japan," Hemmen said.

While studying abroad, Hemmen was able to utilize language and culture skills directly from the classroom to her daily life in Japan. Hemmen comments, "Studying abroad was the single most rewarding semester at WMU." Without receiving the CAS scholarship, Hemmen is unsure if she would have been able to study abroad. She added, "The scholarship turned my trip from memorable to life-changing."
Hemmen says that CAS has immensely helped her throughout her academic career here at WMU. In addition to the scholarship, CAS has guided her through her global and international studies major with incredible faculty that left an amazing impression on her. Hemmen states, "I am thankful to have had the strong and diligent guidance of instructors that have personally invested in my success here at WMU. I would not be the person I am today without that support and motivation."

According to Hemmen, students who wish to study abroad should focus foremost on applying to places that will give them the experiences and freedom that will challenge them most beneficially outside of the classroom. She said, "Academics are a vital part of studying abroad, but the most engaging way to test the knowledge is through immersion." She also emphasized that the ability to travel independently was the reason her trip in Japan was so successful. She used every weekend to travel throughout the country and experience as much as she could with limited time. Hemmen added, "I wish that every student could have that same type of experience."