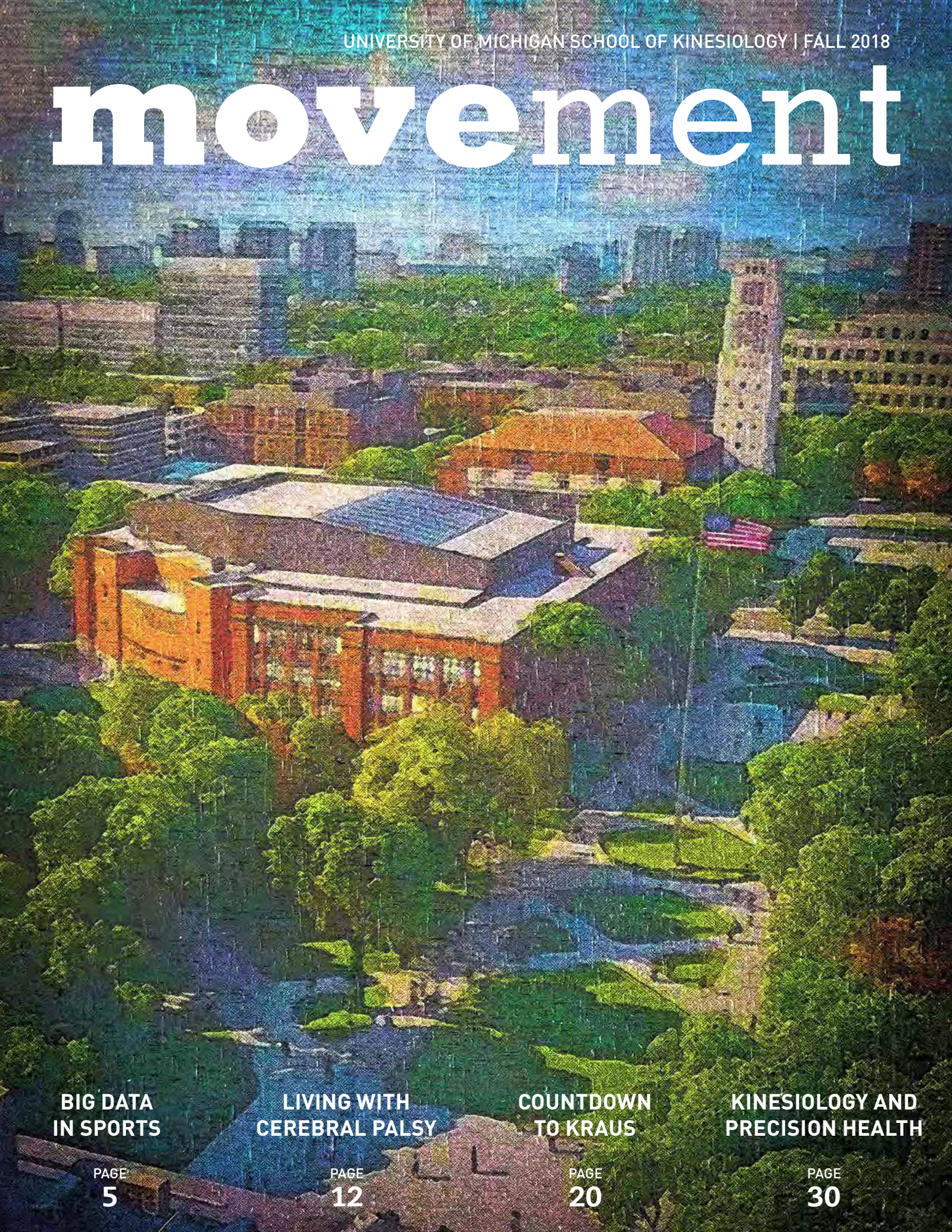


# movement



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# Letter from the Dean



Fall is my favorite time to be on campus. There's something so energizing about the start of a new school year—students and faculty return refreshed and excited to dig back into classes, research, and all the activities a large university has to offer. Alumni return to reconnect, reminisce, and see what's new about their alma mater.

Before we jump into the hustle and bustle of a new year, though, I'd like to take a moment to reflect on our school's accomplishments during the past one. I'm proud to say that we continue to make excellent progress toward achieving our mission of being an international leader in education and research related to physical activity, health and wellness, and sport management. In particular:

We successfully recruited another entering class of high quality undergraduate and graduate students. Our master's program enrollment is up significantly and our undergraduate enrollment remains steady with an increase in yield and selectivity.

We managed several successful faculty searches and will be welcoming two new faculty members this fall. Learn more on page 28.

Our planning for the school's new space in the Kraus Building is advancing nicely and we are on track to move into the newly renovated facilities in fall 2020. Learn more on pages 20-21.

I hope you'll join us at our homecoming open house on Friday, October 5, to help celebrate our achievements and learn about our goals for the year to come. As always, thank you for your continued support of our school—we could not do what we do without you.

**Go Blue!**

A handwritten signature in black ink, reading "Lori Ploutz-Snyder".

**Lori Ploutz-Snyder, Ph.D.**  
Professor and Dean  
School of Kinesiology



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Newly-minted graduates. Photo: Daryl Marshkel/ Michigan Photography.

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# BY THE NUMBERS\*

1,842

STUDENTS TAUGHT FOR A TOTAL  
OF **19,081** CREDIT HOURS

95

FACULTY PUBLICATIONS

6,734

SOCIAL MEDIA MENTIONS AND **800** NEWS  
MENTIONS OF FACULTY RESEARCH  
(SOURCE: ALTMETRIC)

\$256,500

IN SCHOLARSHIP SUPPORT  
AWARDED TO STUDENTS

165

STUDENTS PARTICIPATED  
IN EDUCATION ABROAD  
PROGRAMS\*\*

\$6,563,934

IN RESEARCH  
EXPENDITURES

\$33,000

IN GOGLOBAL SUPPORT  
AWARDED TO STUDENTS

11.5%

INCREASE IN FRESHMAN  
APPLICATIONS

24.8%

INCREASE IN TRANSFER  
APPLICATIONS

6.5%

INCREASE IN  
GRADUATE APPLICATIONS

STUDENTS **HAILING**  
FROM

37

STATES

8

COUNTRIES



# ANALYZE THIS: USING BIG DATA IN THE SPORTS INDUSTRY

BY LOIS MAHARG

Dr. Wenche Wang did her undergraduate and graduate studies in economics, yet last year she became an assistant professor of sport management in the School of Kinesiology. How did that change come about?

“On the surface it seems that there’s a big transition between economics and sports,” Wang said, seated in her office in Observatory Lodge. “But if you really think deeply about the connection between economics and sport management ... some areas are really closely related.”

Wang’s Ph.D. work—in applied microeconomics and industrial organization—involved studying several topics relevant to sports and sport management, including market structure, business strategies, and consumer behavior. She’s also comfortable managing data. Wang worked with data as a student and learned a lot more about it from statisticians, computer scientists, and engineers during her year at the University of Florida’s interdisciplinary Informatics Institute.

“In the past five years or so, there’s been a big research focus on data science all over the world,” Wang said. “Because of the vast amount of data available in sports performance—and business data as well—there’s a lot of room to work with data in sports and there’s a great demand for it as well.”

Wang’s appointment at the University of Michigan began in fall 2017. That semester she taught Introduction to Sport Analytics, a course in which students learned to work with data using basic statistical tools and regression analyses. They then used these techniques to answer real-world questions such as whether a particular advertisement actually increased product sales. Or whether U-M head football coach Jim Harbaugh was worth his salary, based on the team’s performance, number of visitors to the city, and revenue during football season.

In the spring, Wang taught a research methods class in which students learned how to develop a research question; collect, analyze, and interpret data; and write a research proposal. “This kind of research is done everywhere, in academia and industry,” Wang said.

Wang’s research interests include sport analytics, applied microeconomics, and sports economics. The NFL anthem protest is

the subject of a current research project she’s conducting with sport management colleague Dr. Stacy-Lynn Sant.

“We’re working on two papers concurrently,” Wang said. The quantitative paper concerns how consumer responses to media reports affect subsequent reporting.

“It has been found that the media can affect consumers’ attitudes or opinions about issues, especially more controversial, contentious issues” such as the NFL anthem protest, Wang said. “In our paper we want to see how the media responds to consumers’ responses to their previous reporting of a contentious issue.”



*Dr. Wenche Wang. Photo: Emily Mathews.*

Preliminary results reveal two main topics in relevant news reports: Colin Kaepernick, the player who started the protest, and President Trump.

“What we found,” Wang said, “is that when the readers show more sentiment, both positive and negative ... there will be more reporting about the president ... rather than the players.” But the topic is complicated, she added. For more results, we’ll have to wait. ■



*From left: Dr. Teddy Totimeh, Taylor Mazurek, Dr. Jean Louis Benae, and hospital staff. Photo: Taylor Mazurek.*

# NEURO TOUR

## TAYLOR MAZUREK, CLASS OF 2015

BY AMY CRAWFORD

Taylor Mazurek, a 2015 alum of the School of Kinesiology's intraoperative neuromonitoring (IONM) program, had just started a new job with National Neuromonitoring Services, a Texas-based company, when he heard a coworker give a talk about her recent humanitarian trip to the central African nation of Cameroon, organized by a non-profit called the BRAIN Project. He had never been to Africa before, and he told her he'd love to join her if another opportunity arose. Shortly afterward, she emailed him about an upcoming trip to Ghana. The surgeons had requested a second technician this time. Would he be interested?

"I said, 'Heck yeah, I'm interested!'" Mazurek says. "And it turned out to be a trip of the lifetime."

The BRAIN Project was created last year by Dr. Jean Louis Benae, a U.S.-based neurosurgeon who was born in Cameroon, and Dr. Nana Yaw Appiah, a California pharmacologist originally from Ghana. The pair were "tired of talking about giving back to Africa and decided to take action and start with the field we knew best: medicine," Appiah says.

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"Our colleagues in Africa ... have such a heavy workload that anything that we can do to reduce that burden, either with newer technologies or sharing some of our experiences, will hopefully improve the quality of their work life."

—DR. NANA YAW APPIAH

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Appiah and Benae plan to organize at least two trips to Africa each year, serving patients chosen in consultation with local doctors for operations that have included brain and spine surgery, orthopedic surgery, and dental surgery. They also aim to share the latest innovative practices, including intraoperative neuromonitoring, which remains uncommon in the developing world.

"Our colleagues in Africa ... have such a heavy work load," Appiah says, "that anything that we can do to reduce that burden, either with newer technologies or sharing some of our experiences, will hopefully improve the quality of their work life."



Mazurek, his fellow neuromonitorist, and the rest of the surgical team touched down in the Ghanaian capital, Accra, in mid-March, taking a weekend to explore the city's beaches and markets before getting down to work.

"On Monday, Tuesday, and Wednesday we showed up at the hospital between 7 and 8 a.m., and on all three of those days we didn't leave the hospital until 10 p.m.," Mazurek says. The intense schedule would include 20 surgeries, with 11 that required monitoring.

Mazurek was impressed by Ghana's level of development—the hospital was new and "incredibly beautiful," he says. But despite access to cutting edge equipment, the local doctors and medical staff were hampered by lack of training in how to use it. Many had questions for Mazurek about his work.

"I would say my time at Michigan really helped me to educate people over there," says Mazurek, who worked as a neuromonitorist at Michigan Medicine for two years after he graduated. Through his clinical coursework and post-graduation employment, he gained experience monitoring a variety of different surgeries.

It was a whirlwind week, and Mazurek is eager to return to Africa for future trips with the BRAIN Project.

"I would say that Americans have a very, very poor perception of what Africa is actually like until they actually go there," Mazurek says. While Ghana was more advanced than he had imagined, the special challenges of working there also made him grateful for the opportunities he has had in the United States. "It's just very humbling to ... come back to where you live and realize how easy life really is." ■



*The Ghana surgical team, including Taylor Mazurek (center), Dr. Jean Louis Benaie (behind Taylor) and Dr. Nana Yaw Appiah (far right). Photo: Taylor Mazurek.*



# Rethinking Rehabilitation

Maximizing ACL recovery BY JEAN HUNT

An athlete since age five, Dr. Riann Palmieri-Smith met her first athletic trainer after being injured playing high school softball. “The therapy allowed me to return to what I love to do,” she says. The experience inspired her to pursue a career researching athletic injuries. After earning a Ph.D. in sports medicine and athletic training at the University of Virginia, she joined the School of Kinesiology faculty in 2005.

*Above: Dr. Riann Palmieri-Smith and patient Bailey Christensen, who is recovering from ACL surgery. Photo: Daryl Marshke/Michigan Photography.*



Today, Palmieri-Smith is an associate professor and chairs the Kinesiology Athletic Training (AT) program, teaches AT courses, directs the Neuromuscular Research Laboratory (NRL), mentors doctoral students, and collaborates with colleagues across campus, including orthopedic doctors and mechanical engineers.

In the NRL, Palmieri-Smith and her team research the neuromuscular, biomechanical, and functional consequences of knee injury and disease, and work to identify novel treatment approaches to improve rehabilitation after anterior cruciate ligament (ACL) injury. She also studies the mechanisms of post-traumatic osteoarthritis. To achieve these goals, Palmieri-Smith conducts large-scale clinical trials to identify treatment options that lead to successful outcomes.

Over the last 15-20 years, she feels that joint injury science has grown by leaps and bounds, and that the quality of the science has substantially improved.

In 2005, for example, one question was how boys and girls differ on numerous biomechanical and neuromuscular variables, with the goal of finding an explanation for why females tear their ACLs more often than their male peers. While this research was important and led to some interesting scientific discoveries, she says, the questions were somewhat rudimentary and did not consider biological differences between the sexes. “Over the years, scientists have begun to ask better basic science questions at the cellular, single fiber, and ligament level to better understand why

Dr. Riann Palmieri-Smith was just awarded a \$3 million, five-year grant from the National Institutes of Health to study ACL rehabilitation. Her proposed clinical trial will evaluate interventions to maximize muscle function and improve cartilage health following ACL reconstruction. Improving muscle function may improve patient outcomes and potentially serve as a prevention approach for post-traumatic knee osteoarthritis—a disabling disease that carries a substantial burden to society and the affected individual.



*Undergraduate student Hannah Swirple in the Neuromuscular Research Laboratory.  
Photo: Daryl Marshke/Michigan Photography.*

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**“Over the years, scientists have begun to ask ... questions at the cellular, single fiber, and ligament level to better understand why ACL injuries occur. This basic science is now being better translated into clinical research studies.”**

—DR. RIANN PALMIERI-SMITH

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ACL injuries occur. This basic science is now being better translated into clinical research studies.”

A member of the editorial board of *Sports Health: A Multidisciplinary Approach*, Palmieri-Smith recently penned a guest editorial looking back on the National Athletic Trainers Association’s (NATA) achievements over the past ten years. These include nearly doubling their membership, improving AT scholarship, and promoting research and youth sport safety. (Read her article at [myumi.ch/6Q4Ke](https://myumi.ch/6Q4Ke).) In 2017, she earned NATA Fellow status herself.

Palmieri-Smith has also served on doctoral dissertation committees for several mechanical engineering candidates in the U-M College of Engineering. Athletic training and engineering have more in common than you might think. “The human body is one of the most amazing mechanical systems,” she says. “I use engineering principles and biological information to better understand how the knee and the surrounding musculature behaves when injured, and to design/apply interventions that may improve knee joint health after traumatic injury or disease.” ■



# RAISING THE BAR

## NICOLE FORRESTER, CLASS OF 2000

BY JEAN HUNT

Hailing from Cookstown, Ontario, Dr. Nicole Forrester (MVS '00, SM '00) earned her master's in exercise and sport psychology from the University of Texas at Austin and her Ph.D. in sport psychology from Michigan State University. An accomplished athlete—she competed in the high jump at U-M and the Olympics—Forrester has successfully combined her love of sport and science to carve out a career as a sport psychologist and high performance consultant. She is currently an assistant professor at Ryerson University in Toronto in their Sport Media Program.

**Movement Magazine:** Did you come to U-M planning to major in both sport management (SM) and movement science (MVS)?

Nicole Forrester: I was actually interested in studying only MVS—specifically biomechanics and exercise physiology. However, I began taking a lot of electives in SM out of a genuine interest for classes like Sport Media and Sport Marketing, and Sport Law, and realized that I was earning the credits required for an SM degree. The dual degree was an organic process, and spoke to my passion for sport across its various sectors.



*Dr. Nicole Forrester at Everest Base Camp. Photo: Nicole Forrester.*

**MM:** Which Kines faculty members influenced you most?

NF: I loved them all and they each had a special impact on shaping me. From the beloved Professor Pat Maloy, to Drs. [Susan] Brown, [Melissa] Gross, [Katarina] Borer, and [David] Moore. They were all amazing. I knew that they cared about students' success, and they always had an open door to meet with me.

One professor that was pivotal for me was Dr. Victor Katch. His classes were hard and he really challenged us. However, it was what he said outside of class that affected me most. I had a research methods class with him my senior year, and when I presented research in class he really challenged me on it. Outside of class he told me he was hard on me because he had high expectations of me and thought I was "a diamond in the rough." That kind of compliment stays with you for a lifetime and reminds you that you can do good things even when you doubt your abilities and knowledge. Likewise, Dr. Tom George's passion for teaching and sport psychology was always evident, and contagious. I am pretty sure my eventual path in sport psychology was influenced by him.



**MM: How did you become involved with Leading Edge After Performance (LEAP)?**

NF: LEAP is great organization interested in bringing athletes and dancers together to explore their transitions into retirement. A sport psychology colleague asked if I was interested in contributing to this dialogue. Sitting at the table with this diverse group from the dancing and sporting world really highlights their similarities. It can be a difficult road to retirement for these performers.

**MM: Tell us how you came to appreciate adventure travel.**

NF: I wanted to explore places we don't think of as vacation spots, and challenge myself in the process. First on my list was Mt. Kilimanjaro. This trek ignited a new interest and opened my mind to adventure travel. My most recent trip was to Everest Base Camp (EBC). The trek to EBC was meant to squelch a desire to climb Mt. Everest, but I can't say that it did. I'm still curious, and now want to learn to climb with crampons and an ice axe—which would seem to put me in the direction of summiting Everest someday (yikes!). I think next year I'd like to travel to Iceland and the Faroe Islands. It doesn't hurt that my fiancé is trekking enthusiast either. I think we feed off each other in this realm. ■



*Dr. Nicole Forrester at the Lukla, Nepal airport. Photo: Nicole Forrester.*

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**“[My] dual degree was an organic process, and spoke to my passion for sport across its various sectors.” —DR. NICOLE FORRESTER**

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*Forrester speaks at the Queen's University Smith School of Business. Photo: Queen's University.*



# Disability

Students get an in-depth look at living with cerebral palsy

BY AMY CRAWFORD



Zander Bowles—known to his friends and family as “Z”—was born with cerebral palsy, but although most physical activity doesn’t come easily to him, he’s also eager to help his parents around the house. So when Joanne Jiang (HF ‘17), then a senior health and fitness major, was assigned to work with the teen on his motor control skills, he told her he had a few goals. He wanted to be able to take out the family’s trash and recycling. He wanted to fold his own laundry. And he wanted to get the mail.

They might have been simple, even boring, for someone without a disability, but for Z these chores represented something more important: independence. Jiang said she would be happy to help.

“These tasks required him to use his upper body strength,” explains Jiang. “So we focused a lot on using his fingers to grip whatever it was he was trying to hold, as well as extending his elbow to complete the task.”

As they worked on Z’s goals, Jiang also became intimately familiar with his family, learning how a disability affects not only the patient but his parents and siblings.

“It was a very humbling experience,” she says, “just interacting with his parents, learning about the (CP) community and how important it is, and how it really makes a difference when there is a lot of support with you, and when there isn’t.”





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“For me, the biggest goal of this was to have somebody from the next generation really see what it’s like.” —RYAN BOWLES

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*Zander Bowles and Joanne Jiang.  
Photo: Scott Soderberg/Michigan Photography.*

patients’ lives are like. “That’s talking about treatment,” she says. “Living with a disability ... is a totally different experience.”

For Z and his family, the rewards of participating went beyond getting Z a little help with household chores. Z’s father, Ryan Bowles, noted that the professionals—physicians, therapists, teachers—who work with his son often do so in isolation, unaware of the complete picture of Z’s life.

“For me,” he says, “the biggest goal of this was to have somebody from the next generation really see what it’s like.”

Jiang, who will attend graduate school in occupational therapy at Columbia University this fall, is glad that she will be able to carry that knowledge into her career.

“I’ve just learned, in general, what living with a disability could look like,” she says. ■

Jiang worked with Z as part of a new School of Kinesiology course called “Living with Cerebral Palsy: A Multidisciplinary Approach,” which aims to help third- or fourth-year undergraduates who are interested in health care careers understand all aspects of living with a disability. The course consists of a series of guest lectures by physicians, physical and occupational therapists, speech pathologists, movement and exercise scientists, caregivers and community advocates. The classroom portion is followed by an optional internship that offers students real-world experience.

“It’s a more intense exposure to what it’s like to live with a disability,” says Dr. Susan Brown, an associate professor of movement science, who created the course along with Dr. Edward Hurvitz, Chair of Physical Medicine and Rehabilitation at Michigan Medicine. Brown explains that students who go on to study physical therapy or occupational therapy will shadow practitioners as part of their training, but that doesn’t necessarily help them understand what

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This class was funded by a grant from the Nicholas Leoni Endowment Fund, which supports research on developmental motor disabilities, especially cerebral palsy and related disorders, by School of Kinesiology faculty and their collaborators elsewhere at U-M.

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# Building a Better Bot

## Students place in robotic exoskeleton competition

BY JENN MCKEE

It's no coincidence that the U-M student exoskeleton team's name sounds similar to that of a certain iron-suit-clad superhero. They're trying to bring Tony Stark's Iron Man into the real world.

STARX—Strength Augmenting Robotic Exoskeletons—was founded in 2015 by then-engineering student Kevin Rabideau, and the team went from working to create its own Iron Man suit to organizing and hosting the first-ever Applied Collegiate Exoskeleton Competition on May 5, 2018.

The contest featured teams from five different schools (U-M, MSU, University of Nebraska Omaha, Colorado School of Mines, and Iowa State University); and while many of U-M's team members were engineers, recent movement science grad Dominick Macksoud (MVS '18) contributed his knowledge, too.

"My movement science background came into play when we were planning the metabolic testing portion of the competition," Macksoud says. "That part ... was originally going to be an endurance test, where the pilot walked in the exoskeleton until fatigue. I offered a different suggestion: that we find a way to test the energetics of the exoskeletons in a more accurate and functionally relevant way. [Otherwise] a team could just choose their most fit member to walk in the suit for an extended period of time, which would not offer a useful measure of how well the exoskeleton works."

Exoskeletons are wearable machines that augment limb movement by providing increased strength and endurance. Companies like Ford, Delta, and Lowe's (among others), as well as firefighters, are increasingly interested in this technology because it could help workers who engage in repetitive movements or heavy lifting to avoid injury and strain. Plus, exoskeletons are also being developed to help disabled people become more mobile.

"I hope to be involved in researching rehabilitative technology in the future, and I think that advancements in the fields of exoskeletons and robotics could provide numerous benefits to rehabilitation of amputees and other musculoskeletal pathologies that decrease a person's functionality," Macksoud says. "I wanted to compete in the ACE Competition to show people that exoskeletons exist, and they are functional. Obviously, the technology has to be researched and perfected in many ways before it is usable in the general population, but the competition increased exposure and promoted the advancement of these fields, which is rewarding in itself."



*Dominick Macksoud in his ACE Competition shirt. Photo: Dominick Macksoud.*

The five teams in the competed in three rounds: a design/safety review; an obstacle course; and a metabolic efficiency test.

But perhaps the biggest challenge was building an entirely new event from the ground up.

"This was the first year of the competition, so we did not know where it would be hosted, who would attend, what supplies we needed, how to fund it, etc., until we began planning," Macksoud says. "[Engineering student] Jessica Mosier was the head of the competition planning, and she did an excellent job figuring out what

we needed to do and assigning tasks to make the competition happen... The participants, judges, and spectators were all very pleased with how the competition turned out."

U-M's team came in a very close second place, with Colorado School of Mines taking the title. The team (and the competition) will be back in 2019, but Macksoud is moving on to U-M Flint, where he'll be studying physical therapy.

"I hope that learning and practicing physical therapy will give me experience with musculoskeletal pathologies," Macksoud says, "and that I can apply my experiences and knowledge to researching rehabilitative technology at some point in my career." ■





# The school's 2017-18 diversity, equity, and inclusion initiatives

BY DR. KETRA ARMSTRONG

Kinesiology continued its commitment to realizing the ideals of diversity, equity, and inclusion (DEI). As such, we continued offering existing initiatives while implementing new ones. Our DEI goals are to increase the diversity of Kinesiology stakeholders, notably among students; facilitate dialogue in Kinesiology among faculty, staff, and students to enhance the knowledge and understanding of issues and matters related to diversity, equity, and inclusion; and establish a welcoming climate and supportive culture for Kinesiology faculty, staff, and students to thrive. In some instances, we revised some policies and procedures, and in other instances we developed new ones.

Among the DEI initiatives offered in Kinesiology this past year were:

## **Diverse Student Recruitment**

Kinesiology faculty, staff, and students participated in campus visitation events for undergraduate and graduate students as well as various demographically diverse recruitment fairs/events to meet with students and share with them opportunities for undergraduate and graduate education in our school. Our recruitment efforts targeted high schools in the metro Detroit area and an active alliance and engagement with a number of Minority Serving Institutions such as Historically Black Colleges and Universities (HBCUs) and Hispanic Serving Institutions (HSIs). We are creating relationships that will undoubtedly increase the diversity of our undergraduate programs, and our collective efforts at the graduate level have resulted in the highest number of applications and enrollment of underrepresented students in Kinesiology's graduate program history!

## **Kinesiology Diversity and Inclusion Network**

To engage and empower our students to be advocates and champions of diversity and inclusion, we continued to support the Kinesiology Diversity and Inclusion Network (KDIN). KDIN is comprised of a demographically diverse group of undergraduate and graduate

students from various Kinesiology programs. One of the activities of KDIN this past year was the establishment of stations in Kinesiology buildings by which individuals could donate goods to support the Puerto Rico Relief Drive subsequent to the devastation left by Hurricane Maria.

## **Kinesiology Kickback & Kinesiology Game Night**

Kinesiology hosted end-of-the semester activities with food, fun, and games to create community and provide our undergraduate and graduate students with a space and opportunity to decompress from the semester and recharge for final exams.

## **Graduate Research Showcase**

To celebrate ideological and disciplinary diversity within Kinesiology, we offered our annual Research Showcase featuring the research/scholarly activity of our graduate students. Seventeen graduate students shared their scholarship and the event was well-attended to capacity.

## **Kinesiology Bridge Program**

Kinesiology instituted a program to connect and engage students from populations and educational settings that are underrepresented in graduate education and to facilitate their transition to and success at U-M. *Read more about this program on pp. 34.*



*HBCU Alliance graduates with Dr. Ketra Armstrong.  
Photo: Ketra Armstrong.*

### Lunch & Learn: Intercultural Awareness

Kinesiology offered a workshop that featured engaging explorations and discussions about how culture affects our interactions with others, how cultural assumptions may be flawed, and how to navigate our cultural differences. The workshop was facilitated by U-M Organizational Learning and was well attended by Kinesiology faculty and staff.

### Spectrum Allyhood Development Training

Kinesiology faculty and staff participated in workshop delivered by the U-M Spectrum Center that offered a social justice framework to inform, educate, and illustrate various elements of the lived experiences of LGBTQ-identified people. *Co-sponsored by Kinesiology's Office of Diversity, Equity & Inclusion and eMpower staff professional development group.*

### Intercultural Development Inventory Training

The Intercultural Development Inventory (IDI) is a widely used and comprehensive process for ascertaining individuals' cultural competence. Kinesiology supported the training of academic advisors La'Joya Orr



*Graduate Research Showcase participants highlight intellectual diversity. Photo: Emily Mathews.*

and Vanessa Barton to become IDI Qualified Administrators. La'Joya and Vanessa will assist with IDI implementation in Kinesiology and throughout campus.

### Movie Night: 42

Kinesiology hosted the movie 42 to engage students, faculty, and staff in a critical discussion about race and sport. The movie night was held in Bickner Auditorium and featured popcorn, soft drinks, and other snacks. The movie elicited rich dialogue and discussion. *A Kinesiology Dialogues on Diversity initiative.*

### MLK Symposium: The Fierce Urgency of Now (Kinesiology Inspiring Communities & Impacting Lives)

Building on the U-M theme, Kinesiology hosted an MLK Symposium that featured Kinesiology faculty sharing and displaying their

research, teaching, and service that was inspiring local residents and impacting underserved communities. A lively question and answer session followed the faculty presentations and the event concluded with a reception. *A Kinesiology Dialogues on Diversity initiative.*

### Intellectual Diversity & Global Engagement: Sport and Fitness in China

Consequent to the growing interest and enrollment of Chinese students in Kinesiology, Kinesiology cosponsored the U-M China Forum, which featured current and former Kinesiology graduate students. Dr. Ketra Armstrong made a presentation at the forum and discussed graduate education, the business of sport and fitness, and global engagement of Kinesiology students in China. ■

*Learn more about our diversity, equity, and inclusion efforts at [kines.umich.edu/DEI](https://kines.umich.edu/DEI).*

*Members of the Kinesiology Diversity & Inclusion Network. Photo: Emily Mathews; Kinesiology faculty and staff at Lunch & Learn: Cultural Awareness. Photo: Ketra Armstrong; Students at Kinesiology Game Night. Photo: Ketra Armstrong.*





# FOR THE LOVE OF THE GAME

J.J. and Kelsey Putz, Class of 2010 and 2002

BY JENN MCKEE



*The love story of a former Major League All-Star pitcher and an All-American softball star began on U-M's campus—fittingly, inside a place known as “the baseball house.”*

J.J. Putz (SM '10) and his wife, former U-M softball second baseman Kelsey Kollen (SM '02), had been celebrating the U-M baseball team's Big Ten Tournament title when they first met in the “baseball house” and struck up a conversation.

“It was at 1501 State St.,” says Putz, a Trenton, Michigan, native who now works in the front office of the last Major League team he played for, the Arizona Diamondbacks, as special assistant to President and CEO Derrick Hall. “A former player—his parents owned it at the time and rented it to a bunch of baseball guys for the better part of six years.”

“It's funny now to look back on it, twenty years later,” says Kelsey Putz, who grew up near Los Angeles. “... I liked his personality and his energy, but I was just a freshman, and he was a senior.”

Though J.J. was just ten credits shy of earning his kinesiology degree when he left Ann Arbor to play for the Seattle Mariners—he was drafted in the sixth round in 1999, and made his MLB debut in 2003—he and Kelsey stayed close through the usual long distance relationship channels, which suited them both. After all, J.J. had to live modestly and travel constantly as he worked his way through the minor league system.

“And I was so busy with softball,” says Kelsey. “... I didn't worry about him or his career at all. I had enough distractions with school and sports.”

*J.J. Putz and Kelsey Putz on their namesake field. Photo: Sarah Sachs/Arizona Diamondbacks.*

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“Kelsey didn’t know her name was on the [score]board until the unveiling... I wouldn’t be where I am without her.” – J.J. PUTZ

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This also, as it turned out, prepared the two for the earliest years of their marriage—which began after Kelsey graduated with her own sport management degree in 2002.

“That’s how the first twelve and a half years of our marriage went,” Kelsey says. “Living around baseball’s schedule, and all the travel—it’s weird, in hindsight, but that’s all we’ve ever known... . And I’ve always been pretty independent. There have been times more recently when he’s at home, and I tell him, ‘You need to go find something to do.’”

“Sometimes I get in the way,” jokes J.J., who, at 6’5”, towers over most.

The couple has four children: three daughters (including a pair of twins, the oldest) and one son. J.J. and Kelsey might never have met, though, if J.J. tried to make the leap into the majors from high school—which he could have, thanks to the Chicago White Sox drafting him in 1995, in the third round.

“It was a great honor, but I knew right away I wasn’t ready to be out on my own and take that step as a seventeen year old kid,” says J.J. “I’d always wanted to go to Michigan... and my time there allowed me to mature more.”

In addition to the Mariners, J.J. pitched for the Mets, the White Sox, and the Diamondbacks. But in order to finish up his degree, J.J. had to earn those remaining ten credits, which he did in 2010—when he was still playing in the majors.

“They were mostly elective credits, so it was really about finding the time to do the work,” he says. “When you’re that close to something—I just couldn’t pass up on that. And it’s about my kids, too. I didn’t ever want to hear, ‘Well, you never graduated.’ So whenever I had a moment, I knocked out the work I needed to do.”

But this Michigan baseball/softball power couple’s legacy was most visibly reinforced when they donated money to the Arizona Diamondbacks Foundation’s “Diamonds Back” Field Building Program, and a new field in Phoenix—the first one built by the program specifically for softball—was christened with both their names on it in 2016.



*J.J. Putz on the J.J. and Kelsey Putz Field. Photo: Sarah Sachs/Arizona Diamondbacks.*

But for Kelsey (and the couple’s children), seeing her own name on the scoreboard was a surprise.

“When they approached me about it, I knew it was something I wanted to do,” says J.J., who wanted to build a softball field not only to honor Kelsey’s career in the sport, but also because he’s a father to three daughters. “... And I thought Kelsey’s name should really be on it, too... The whole community relations team kept it under wraps, so Kelsey didn’t know her name was on the board until the unveiling... I wouldn’t be where I am without her. It just seemed like a good fit, so really, it was a no-brainer.”

So the J.J. and Kelsey Putz Field stands as a lasting testament to the couple’s love for each other as well as the games they spent much of their lives playing.

And speaking of long-term loyalty, if you call J.J.’s cell phone, what you’ll hear first is “The Victors.” ■



The Edward Henry Kraus Natural Science Building will become our new home in the fall of 2020. Designed by renowned architect Albert Kahn, the Kraus Building has been a university landmark since 1915. Our goal, after a transformative renovation, is to have all our facilities together—for the first time in our school's history—in one amazing location right in the heart of central campus. These artist's renderings show a small portion of what our beautiful new building will look like.

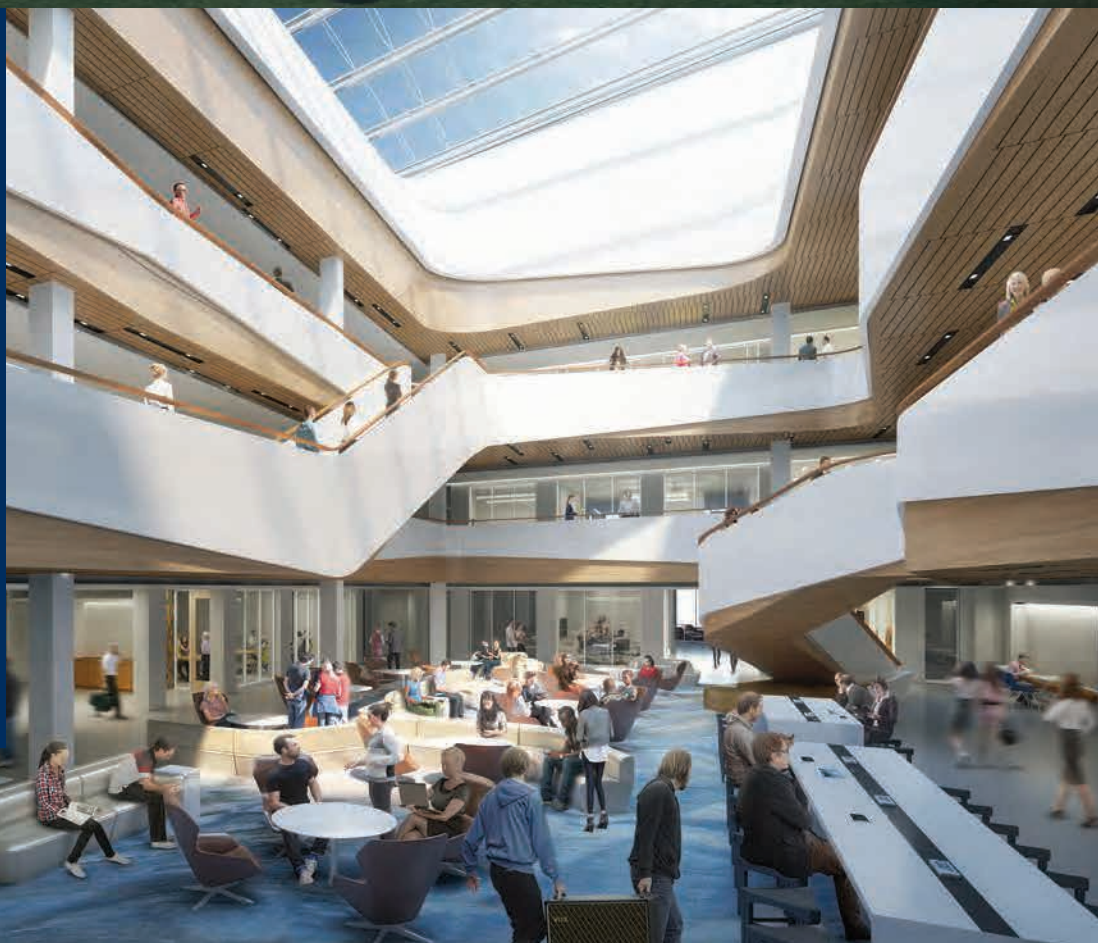
# COUNTDOWN TO KRAUS



## Commons

The second-floor Commons will be the focal point of the new building. A glass roof will distribute light to the three upper levels, creating a bright and airy environment. There will be plenty of space for students, faculty, and staff to have break-out collaboration sessions or just relax and chat between classes.

The furniture can also be reconfigured or removed to create an event space for lectures, panel discussions, career fairs, networking receptions, and more.







## Active Learning Classrooms

All ten classrooms, located on the second and third floors, will have flexible, engaged learning-style layouts, rather than traditional “stadium-style” seating, and will accommodate a wide range of class sizes. The second-floor classroom shown here is highly visible and adaptable, and will accommodate 120 students.

## Student Affairs Suite

The second-floor Student Affairs Suite will be right in the middle of student traffic and is easily accessible for advising sessions between classes. An adjacent Career Center will feature hoteling stations for employers and students to use for meetings or interviews, plus a resource room for workshops, advising, employer information sessions, and more.



## Class Labs

Six classrooms on the second and third floors will be dedicated to laboratory and small break-out classes. Each will accommodate 20-30 students.



## High Bay Labs

Four first-floor high bay labs, with tall ceilings for technology like motion capture, will be available for research. The new building will also have five first-floor low bay labs, which have standard ceilings and are very flexible for different research needs.



# CIRCUIT SWITCH

New tools may help rewire the brain

BY AMY CRAWFORD

The prototype is fairly simple: a pair of red lab goggles jury-rigged with duct tape and a prism. But the effect is like a magic trick: Peer through as you move your right hand, and it looks—and feels—like you're moving your left. By fooling the brain, this low-tech illusion could soon help stroke patients regain the use of their affected limbs.

"In the early stages after a stroke, the brain goes through a reorganization," says Dr. Michael Vesia, assistant professor of movement science. He is currently using the reversing prism with healthy volunteers in his lab, but plans to test it soon in patient populations. "The key is, what happens if we intervene here and start to use these sensory manipulations, where you train with your unaffected hand, but you see it as the other? The brain thinks you're using that hand, and starts to reorganize. Any dead neurons may not be able to work, but we can get alternate neural pathways involved, because the brain is so plastic."

Vesia joined the faculty of the School of Kinesiology last year after conducting post-doctoral research at Krembil Research Institute in Toronto. His work may eventually lead to better prognoses for people with brain disorders and injuries—not only stroke, but also neurodegenerative diseases like Parkinson's. At the heart of his research is a fascination with the complex, two-way relationship between the brain's circuitry and the way it perceives and moves the body.

"The goal is to try to understand how the system changes when something goes wrong," Vesia explains. "Then we can use different techniques to manipulate it."

In addition to the prism, another tool in Vesia's arsenal is transcranial magnetic stimulation (or TMS), which directs a magnetic field over targeted regions of the brain, producing electrical currents that let researchers measure and affect brain activity. Used in conjunction with simple exercises, drugs or other therapies, TMS could help rewire neural circuitry, allowing patients to recover from conditions that affect their motor abilities.

While he has been busy recruiting students, writing grants and setting up his lab since arriving in Ann Arbor last fall, Vesia



*Dr. Michael Vesia and graduate student research assistant Dalia Khammash test the TMS device. Photo: Emily Matheus.*

looks forward to collaborating with colleagues across the university—such opportunities, in fact, are a large part of what enticed him to Michigan in the first place. He is hoping to work with mechanical engineers to build piston-driven frameworks, or "exoskeletons," that will move a patient's affected hand as he or she exercises the other—another potential way to rewire the circuitry of the brain. He is also interested in working with psychiatrists to analyze how affect—a person's mood—influences cognition and motor control, a relationship that may be especially important in patients with traumatic brain injuries. And he would like to work with surgeons doing deep-brain stimulation, in which electrodes are implanted within the brain itself.

"The University of Michigan has it all: a cutting-edge research hospital, access to patients and older adults, and talented researchers in other fields that you can collaborate with, from psychology, biology, engineering, computer science, neurology, the medical school—it's all here," he says. "You literally walk three, four blocks, and you have access to world-class facilities—but more importantly, world-class minds and research." ■



# Happy Birthday, KidSport!



KidSport Summer Camps will celebrate its 30<sup>th</sup> birthday this upcoming summer. Since 1989, KidSport has taught kids aged 4-13 how to play and enjoy a variety of team and individual sports, team-building games, and physical education activities—including swimming—in a fun, low-pressure environment.

KidSport is an expanded version of the Summer Youth Fitness Program, which was started in the 1950s by then-department chair Dr. Paul Hunsicker.

With childhood obesity on the rise, it's more important than ever to give kids the skills and confidence they need to stay active and healthy throughout their lifetimes. To learn more about KidSport Summer Camps, visit [kines.umich.edu/kidsport-summer-camps](http://kines.umich.edu/kidsport-summer-camps). ■

*Top: The very first KidSport campers in 1989. Photo: Paul Jaronski.  
Below: Current KidSport campers at the Scarlett Middle School pool.  
Scott Soderberg/Michigan Photography.*







# HURRAH

## FOR THE YELLOW AND BLUE: HOMECOMING 2017

BY LOIS MAHARG





*Kinesiology alumni joined students and faculty at the Michigan Union for the 2017 homecoming mixer on the evening of October 27, a lively gathering followed by the alumni awards dinner at the Power Center. Dean Lori Ploutz-Snyder welcomed attendees. Noel Cimmino (SM '94), Kinesiology Alumni Society Chair, presented awards to five Kinesiology alumni.*

### Early Career Achievement 2017 Awardees

**Nick Shaw (SM, '11)** moved to Manhattan and became a certified personal trainer. His work training and designing diet programs for pro athletes and business professionals led to the founding of Renaissance Periodization, a training and diet services company he launched in 2015. The company's meal and training plans are 100% evidence-based, challenging standard practices.

Shaw is also a competitive powerlifter and bodybuilder and has worked with national-level physique athletes and world-class strength athletes.

Cofounder and head science consultant for Renaissance Periodization, **Mike Israetel (MVS, '07)** earned graduate degrees in sport physiology and then became a professor of exercise physiology, personal training, and advanced programming for sports and fitness the University of Central Missouri. He also served as a nutrition consultant and coached numerous athletes at the U.S. Olympic Training Center.

In addition to working with Renaissance Periodization, Israetel is currently a professor of exercise and sport science at Temple University. He also competes as a powerlifter, bodybuilder, and Brazilian jiu-jitsu grappling champion.

### Career Achievement 2017 Awardees

After earning a master's degree, **Jose Kottoor (M.S., '94)** became director of physical medicine and rehabilitation at Botsford Hospital in Farmington Hills. Then he directed rehabilitation services for the U-M Health System from 2002 to 2011.

Subsequently he served as director of physical and occupational therapy with the Beaumont Health System, where he recently became vice president of operations. With over 25 years of experience in the healthcare industry, Kottoor is a leader in physical therapy, healthcare, and rehabilitation.

**Melva Thompson-Robinson (PE, '89)** earned a master's degree at Ohio University and a Ph.D. at the University of South Carolina. Subsequently she has worked in the areas of health disparities and sexual health, seeking to improve African-American health and prevent HIV/AIDS and teen pregnancy.

Thompson-Robinson has served as associate executive director for the Institute for HIV Prevention Leadership and as executive director for health disparities research at University of Nevada, Las Vegas. Currently a professor there, she teaches classes in public health and coedits the *Journal of Health Disparities Research and Practice*.

### Lifetime Achievement 2017 Awardee

**Donna Fry (M.S. '87, Ph.D., '98)** did her undergraduate and graduate studies in the School of Kinesiology. Joining the University of Michigan-Flint faculty in 1987, she currently serves as dean of the School of Health Professions. She is also a licensed physical therapist.

Fry has served on numerous boards and held several leadership positions. She has published 22 peer-reviewed journal articles, made over 90 professional presentations, and developed a patent. She has raised over \$4 million in grant funds and is the recipient of several prestigious awards for research and service.

*View our 2017 Homecoming photo album on Flickr at [myumi.ch/aAyEP](https://www.flickr.com/photos/myumi-ch/albums/).*



*Left page, top row: Current students; Professor Mark Rosentraub and alum Dexter Mason; Professor Leah Robinson and student. Middle row: Alum Jerry Gonser; Dean Lori Ploutz-Snyder (left) and Alumni Society Chair Noel Cimmino (right) with 2017 alumni award-winners Mike Israetel, Nick Shaw, Jose Kottoor, Donna Fry, and Melva Thompson-Robinson. Bottom row: Alumni Society board member Heidi Haite and a fellow alum; awards dinner attendees. Photos: Tara Danielle.*





*Alumni at the homecoming dinner. Photo: Scott Soderberg/Michigan Photography.*

### STAY IN TOUCH

What have you been up to? Let us know at [bit.ly/kinesupdate](http://bit.ly/kinesupdate) and you could be featured in the next *Movement* magazine.

**Dr. Jim Berry, EdD, ATC, SCAT, NREMT (PE '89)** was recently selected as the 2018 winner of Training & Conditioning Magazine's Most Valuable Athletic Trainer Award.

**Mike Burger (SM '90)** is now a data architect for the Detroit Tigers. He handles all database baseball operations for the team.

**Tracey Cohen (PE '93)** published her first book, *Six-Word Lessons on Female Asperger Syndrome: 100 Lessons to Understand and Support Girls and Women with Asperger's*, in 2015 and her second book, *Six-Word Lessons on the Sport of Running: 100 Lessons to Enjoy Running for a Lifetime*, in 2017. Tracey was also awarded the Ted Lindsay/Sergei Fedorov Individual Courage Award in 2017.

**Scott Doyne (SM '96)** has been tapped to lead the product strategy team for Turner's consumer digital product efforts. He lives in Atlanta with his wife of 18 years, Aimee Barocas Doyne (SM '97) and two children, Brandon ('26) and Sophie ('28).

**Adrian Heneveld (SM '14)** is now the regional director of Harlem Lacrosse, a school-based non-profit that places program directors in urban schools to provide academic and behavioral support throughout the day and study hall, lacrosse, enrichment trips, and leadership training after school. After establishing Harlem Lacrosse's first boys' program in Boston, he was promoted to regional director to oversee and support its five Boston programs.

**Bryan Joyce, LMSW (SM '06)** received a Master of Social Work degree from U-M and is now a social worker and clinical consultant for Behavioral Care Solutions, providing psychotherapy for geriatric patients in long-term care.

**Dr. Krystal Baggs Martin, PA-C, DPT (MVS '04)** went on to graduate from U-M Flint's Doctor of Physical Therapy Program in 2007 and has practiced as a physical therapist for nearly 10 years. Her most recent accomplishment is graduating from Eastern Michigan University's Physician Assistant Program in April 2017. Krystal says she could not have accomplished this without the support of her husband of 11 years, Michael C.

Martin (Chemical Engineering '04), and their two children, Jocelyn and Joshua. She is sure that the foundation the University of Michigan gave her has helped her accomplish her goals in life! Go Blue!

**Elmo Morales (PE '68)** has started Elmo's Ping Pong Palace, which aims to teach and coach youth through senior citizens in the sport of table tennis. Hand-eye coordination, balance and motor control, and cardiovascular endurance are developed in this fun and easy-to-learn sport. A long-term goal is to develop an Olympic champion by the year 2036.

**Matthew Nagy (MVS '17)** has just completed a Master of Public Health degree at the University of Michigan and has accepted a full scholarship to attend medical school at the Cleveland Clinic Lerner College of Medicine.

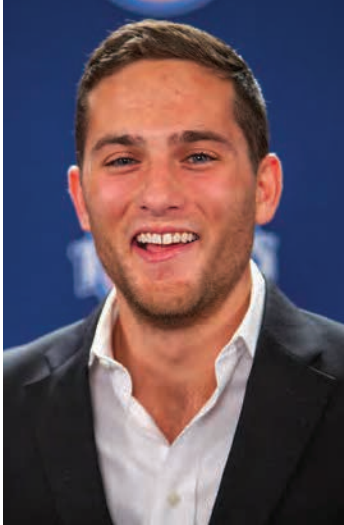
**Toby Scott-Cross (MVS '02)** is an assistant academic fieldwork coordinator and instructor in the Horses, Humans, and Health Minor Program at Eastern Kentucky University.

**Asher Stoller (MS '96)** is a financial advisor with the Weissman Eppler Investment Group of Wells Fargo Advisors, an Ann Arbor-based wealth management team for high net worth individuals and families. Asher and his wife Sara have four children, Ava, Ruby, Lola, and Sam.

**Randy Wills (SM '08)** is the director of premium sales for the Orlando Magic, where he oversees the strategy of premium revenue streams and development of the B2B sales team.

**Alyssa Wischmeyer (MVS '07)** received her Doctor of Physical Therapy degree and is now a physical therapist at Howard Head Sports Medicine.

## JAKE GOLDBERG MEMORIAL SCHOLARSHIP FUND



**Jake Goldberg (SM '16)** passed away unexpectedly in January 2018. His love of sports played a central role throughout his life, both as a participant and a fan. From early on, his goal was to work in the sports industry. That passion led him to the U-M Sport Management Program where, along with being an avid Wolverine supporter, he was an engaged student and demonstrated his leadership skills as president of the Sport Business Association (SBA). Jake credited the program with providing him an opportunity to pursue his dream and begin a career working at the Detroit Pistons.

Despite his too-short life, Jake touched many people and impacted their lives in a positive way. To many of his peers, Jake was a loyal friend, leader, mentor, and support system, helping to make the SM program feel like home. The Jake Goldberg Memorial Scholarship Fund celebrates Jake's memory and helps students with limited financial resources realize their dream of an SM degree and a career in the sports business world. The scholarship will continue Jake's legacy, paying it forward by helping others achieve their goals. To learn more, visit [kines.umich.edu/goldberg](https://kines.umich.edu/goldberg).

### *You're Invited! Save the Date for These Fun Fall Events*

#### **Homecoming Open House**

Friday, October 5, from 4:30-7:30pm  
Diag, next to the Kraus Building  
RSVP at [myumi.ch/aVVv7](https://myumi.ch/aVVv7)

#### **Borer Lectureship with Dr. Mary Jane de Souza**

Friday, October 26, from 2:30-5pm  
Palmer Commons

#### **Parent & Family Weekend Open House**

Friday, November 2, from 2-4pm  
CCRB, Bickner Auditorium

Visit [kines.umich.edu/events](https://kines.umich.edu/events)  
for more information as the dates  
get closer.



# faculty & staff

## UPDATES



**Dr. Brian Umberger** joins us as professor of movement science in fall 2018. He studies basic and clinical aspects of locomotion in humans and other bipeds, using a combination of experimental and computer modeling techniques. Umberger's research aims to advance our understanding of the mechanics, energetics, and control of bipedal locomotion, which may help restore mobility in gait disorders.



**Ron Wade** joins us as a clinical assistant professor of sport management in fall 2018. He spent a decade as the director of marketing for the Detroit Tigers and honed his teaching skills at Wayne State University. Wade's particular areas of interest include sales, marketing, and social media in sport.



**Dr. Jacob Haus** joined us as an associate professor of movement science in winter 2017. He studies mechanisms of obesity, insulin resistance, and diabetes, and how exercise and diet can reverse or prevent these conditions. Haus's research aims to validate early treatments for diabetes, such as drugs or lifestyle interventions, so they can help prevent and treat long-term complications associated with the disease.



**Dr. Katarina Borer**, professor of movement science, retired from the university in spring 2018. She joined the School of Kinesiology in 1977. Her prolific research career in exercise endocrinology resulted in more than 100 journal articles, books, and book chapters. Borer participated in over 130 symposia; mentored more than a dozen master's and Ph.D. students; and taught hundreds of undergraduate and graduate students in her classes. Borer also served on two dozen committees across the university and served several times as Associate Director for Research and Movement Science Program Chair.



**Dr. David Moore**, associate professor of sport management, retired from the university in spring 2018. He joined the School of Kinesiology in 1990 after a stint at Ross Business School. Moore's research focused on consumer behavior and emotional responses to advertising in the sport industry—from their perception of concessions to their recall of Super Bowl commercials to how they're influenced by social media. Scores of sport management undergraduate and graduate students have benefitted from Moore's marketing and advertising acumen.

In spring 2018, the U-M Board of Regents approved the following faculty promotions:

**Dr. Steven Broglio**, professor with tenure

**Dr. Deanna Gates**, associate professor with tenure

**Dr. Rebecca Hasson**, associate professor with tenure

**Dr. Kathryn Heinze**, associate professor with tenure

### STAFF

**Ashley Miller** joined us as HR generalist in fall 2017. **Marina Lukyanchuk** joined us contract & grant specialist in spring 2018. **Tahirah Gimson** joined us as graduate program and OBL administrative assistant intermediate in summer 2018. **Julie Stilber** joined us as academic advisor in summer 2018. **Ryan Olthoff** joined us as sport management career coordinator in summer 2018.





# Data-Driven

## Student group provides consulting services to sport business industry

BY JACOB ROTHMAN AND THE MICHIGAN SPORT CONSULTING GROUP EXECUTIVE BOARD

The purpose of the Michigan Sport Consulting Group (MSCG) is to provide pro-bono consulting services across the sport business industry. We work in a variety of verticals, from statistical analysis to data collection and market research, in order to provide detailed recommendations that drive business for our clients. Currently consisting of 30 members, the club was founded in the fall of 2016 by Jacob Rothman and Shane Perlin, with the help of faculty advisor Dr. Adriana Phelan. Since then, the organization has quickly established itself as one of the integral student activities of Michigan's renowned sport business field. Going forward, MSCG hopes to continue to bring value to its members and clients through impactful new engagements while growing the group's presence on campus and within the industry.

First and foremost, MSCG, strives to provide its members with hands on experience to develop the skills and connections they need to best succeed in the sport business world. To that extent MSCG has already successfully completed three projects in its young history. This past fall, MSCG created a comprehensive collegiate licensing revenue database for the Navigate Research Company. This engagement was capped off with a presentation of MSCG's recommendations for Navigate to strategically grow their University Business at their company office in Chicago.

During the course of the winter 2018 semester, MSCG engaged in two projects simultaneously. For new expansion

National Premier Soccer League (NPSL) team, FC Baltimore, a series of detailed deliverables were crafted highlighting opportunities and recommendations for corporate sponsorships, media rights deals, and local business partnerships for the young team. For FanDome, a startup social media platform, MSCG test marketed the product on the campus of the University of Michigan to gauge interest for the platform among the college student demographic. This research led to the development of multiple new initiatives to help enhance the value of the product with its target audience.

Personally, being a member of the Michigan Sport Consulting Group has proved to be an invaluable experience. As an individual aspiring to work in the sport business industry after I graduate, no other opportunity has done more to bring me closer to my professional aspirations. The projects have provided three unique internships for me during the span of a single academic year. Moreover, being a member of the organization is an ideal environment to connect and build relationships with peers who share my career goals and professional interests. Finally, the club serves as a lightning rod to help network with professionals across the industry. For any alumni that wish to become involved with MSCG, we are always looking for those involved in the sports world who may be interested in working with MSCG by offering new and functionally diverse engagements. ■

*Club members (from left) Jacob Rothman (President), Shane Perlin (Vice President), Ryan Armbruster (previous Director of Client Acquisition), and Alex Roude (current Director of Client Acquisition). Photo: MSCG.*

# LET'S GET PERSONAL(IZED) Kinesiology and precision health

BY LOIS MAHARG

Movement is a pillar of health and wellness, yet it differs from person to person and changes over time. Recognizing these differences has led researchers to inquire into the physiological and environmental factors driving them, with the goal of developing personalized practices that maximize activity and health. Read on to learn more about exciting discoveries Michigan Kinesiology researchers have made recently.

## Making prosthetics easier to choose and use

Individualized prosthetic devices can greatly improve quality of life for amputees. But they're expensive and often underutilized—particularly upper-limb prosthetics—because wearers aren't satisfied with the fit or functionality.

Dr. Deanna Gates, associate professor of movement science, wants to increase the number of prosthesis candidates who will actually use and benefit from new devices. So she surveyed amputees as to how likely they would be to undergo three different experimental surgical procedures aimed at equipping them for an upper-limb prosthetic. The device would enable them to perform actions such as opening and closing a hand, grasping, and sensing touch.

Gates found that people were more likely to choose a medical intervention if they (1) were younger in age, (2) had only one amputated limb, (3) had the amputation for a relatively short time, and (4) had higher pain frequency.

*A running assessment underway in the MiPR lab. Photo: Austin Thomason/Michigan Photography.*



Gates recommends offering experimental interventions to amputees with these characteristics until the success of each one is determined, at which point it could be offered to the general population.

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Each person is a complex and evolving system, so finding ways to monitor the changes and enhance activity at every stage is a key to precision health.

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## Building healthier fat tissue

About 70% to 80% of obese adults have type 2 diabetes or metabolic abnormalities that can lead to the disease. The research interest of Dr. Jeff Horowitz, professor of movement science, lies in identifying factors that protect the remaining 20% to 30% from metabolic health problems, information that could improve the health of all obese adults.

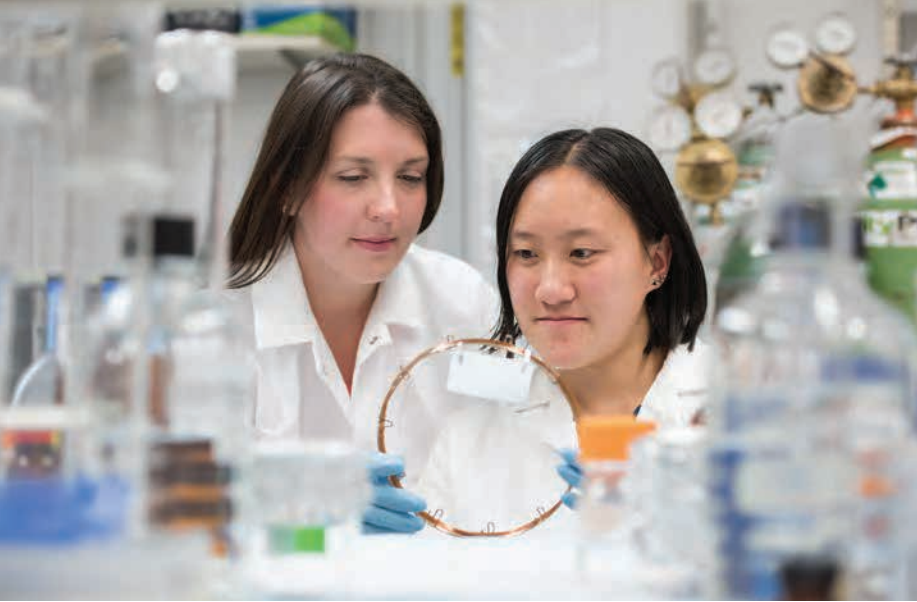
Healthy adults typically store excess fat energy in fat tissue rather than in the liver, muscle, and pancreas, where it is harmful. By testing fat biopsies from obese adults who are insulin sensitive (healthy) and those who are insulin resistant (unhealthy), Horowitz is seeking to identify the mechanisms that promote good health. He suspects that compared with obese adults with metabolic problems, healthy obese adults have modifications in their fat tissue that allow them to store excess fat energy more effectively.

Horowitz is also examining how daily exercise may enable fat tissue to store fat more effectively, which could promote better overall health during periods of overeating and weight gain.

## Getting younger kids ready to move and learn

The assumption may be that children pick up motor skills such as running, jumping, throwing, and catching naturally at the developmentally appropriate time. Yet according to Dr. Leah Robinson, associate professor of movement science, such skills—which greatly enhance children's health and well-being—must be taught, practiced, and reinforced.





*Left to right: Researchers are working to determine how daily exercise may enable fat tissue to store fat more effectively. Photo: Scott Soderberg/Michigan Photography. A preschooler practices her motor skills. Photo: Roger Hart/Michigan Photography.*

To that end, Robinson has created the Children's Health Activity Motor Program (CHAMP), an individualized intervention promoting motor skills and physical activity in children aged 3 to 8 years. The program's aim is to ensure that all children starting school are healthy, active, and ready to learn. Early tests show the program promotes motor skills in boys and girls equally and that children in CHAMP tend to engage in more vigorous physical activities than those that normally occur at recess and in physical education class.

Other findings indicate that CHAMP promotes positive social-emotional behavioral responses and healthy growth and development. Robinson is currently examining the long-term effects of CHAMP on 300 preschoolers. She will follow them through kindergarten, first, and second grades.

## Tracking environmental impacts on health

Dr. Natalie Colabianchi, associate professor of health and fitness, examines how the context in which people live, work, and play affects their physical activity levels. Objective information about where people are and what they're doing is relatively easy to obtain with smartphones and accelerometers. These new technologies allow researchers to ask more nuanced questions than they could in the past, such as whose idea it was to go to the gym or why, once there, a person was not being active.

Such individualized data allows researchers to test and refine assumptions used in previous research. For example, the assumption that adolescents engaged in most physical activity inside their neighborhoods was shown to be only partially correct when new technologies were employed. Other research has shown that between 5th and 7th grades, children use fewer places for physical activity, which is associated with a decline in their physical activity over time.

Findings like these enable researchers to develop interventions that increase physical activity in ways that are sensitive to people's home environments and to advocate for policies and environmental changes that promote activity.

## Maximizing performance at all ages

Dr. Ron Zernicke and Dr. Cristine Agresta, co-directors of the Michigan Performance Research Lab (MiPR), run studies and do clinical assessments involving personalization of products and programs designed to maximize performance and enhance quality of life.

One current project involves working with Adidas to personalize footwear based on biomechanics and comfort preferences. Using wearable technology and complex system analysis, MiPR is working to create a model that will produce a completely custom shoe using 3D printing or provide better off-the-rack fit.

Another project involves analyzing data on personalized physical activity programs for older adults. The goal is to determine how these programs translate into better function and quality of life. MiPR also works to tailor exercise programs to elderly people that target areas of weakness and keep them active and independent as long as possible.

Finally, Zernicke and Agresta conduct running assessments to create customized training programs for runners. They look for global metrics that identify positive and negative adaptations and global patterns, with the ultimate aim of creating an optimally effective training program for each individual.

Each person is a complex and evolving system, so finding ways to monitor the changes and enhance activity at every stage is a key to precision health. ■

# FANTASTIC VOYAGE

## Students travel to China, Italy, and Russia

Our students had the chance to participate in three new education abroad experiences this summer. Their travel was made possible in part by the Bruce and Claudia Resnikoff GoGlobal Fund, Beverly Ulrich Global Initiatives Fund, and Carl and Joan Kreager Travel Award.

### CHINA



*Above: At the Juyongguan entry spot for the Great Wall. Right, from top to bottom: At a local elementary school in Wuxi during a conference for innovative physical education curriculum and teaching. The Kines students taught English words and songs to this second-grade class before one of the sessions. Visiting the Mt. Lingshan Grand Buddha in Wuxi.*

A new two-week course called “Health, Wellness, and Sport in China” took students to Beijing and Shanghai. They spent time at Beijing Sports University, which focused on traditional Chinese body and mind exercises and therapeutic methods, and East China Normal University, which focused on physical activity programs offered in Chinese schools. The trip was led by Dr. Weiyun Chen, associate professor of health and fitness; Dr. Tom Templin, associate dean for faculty and undergraduate affairs; and Dr. Tom George, assistant professor of clinical practice for health & fitness and sport management.

**“Overall, it was an amazing trip and so much fun. We learned a lot, made great friends, and experienced a new and very important culture that will influence our lives.”**



# ITALY



*Above: In Piazza San Marco (St. Mark's Square) in Venice. Right, from top to bottom: At La Specola, a human anatomical wax museum, in Florence. On the Grand Canal in Venice.*

**“Amazing experience! You get to see how much you know and you get to expand your knowledge on the subject of anatomy. You form new and amazing relationships and get to experience a new culture.”**

Students in the new “Art and Anatomy in the Italian Renaissance” course traveled to Rome, Florence, and Venice. They learned about the expansion of knowledge in the anatomical sciences; the role of art and artists in the scientific revolution of the Italian Renaissance; and how art, technology, and science are vital for visualizing knowledge. Highlights included the Natural History Museum (with its renowned collection of anatomical wax models), Uffizi Gallery, and Galleria dell’Accademia in Florence, plus day trips to anatomical theaters in Bologna and in Padua. The trip was led by Dr. Melissa Gross, associate professor of movement science; Vanessa Barton, global engagement coordinator; and art historian Dr. Wendy Sepponen.

# RUSSIA



*Above: Student Yuliya Ivanova at Spartak Stadium in Moscow. Right, top to bottom: Student Riley Nelson (far right) with other interns. Students Marcus Cook and Polina Shchennikova.*

Four Kinesiology students were in Russia for several weeks to gain career experience at the biggest sporting event on the planet—the World Cup. They earned academic credit for working in different aspects of the international sport industry, including hospitality, media relations, and volunteer management, in Moscow and surrounding cities. The internships were organized by Ryan Olthoff, sport management internship coordinator.

**“This was my first exposure to soccer, and what better event than the World Cup ... I had such a great time, and I met volunteers from all over. Out of the full 17,000 volunteers, only 7% were foreigners!”**



# CONNECTING AND ENGAGING STUDENTS FOR SUCCESS

## School launches Summer Bridge Program

BY DR. KETRA ARMSTRONG



The School of Kinesiology is pleased to continue its recently developed Bridge Program for new graduate students from diverse populations (such as first generation students) and educational settings (such as Historically Black Colleges/ Universities, Hispanic Serving Institutions, and Tribal Colleges) that are generally underrepresented in graduate school in general, and in Kinesiology and U-M graduate programs in particular. The overarching goal of the Bridge Program is to connect and engage such students for success.

This goal is accomplished in a number of ways, such as familiarizing the students with the resources available on campus; offering the students a Kinesiology support network; providing a welcoming climate and supportive community to assist the students in their transition to U-M; and facilitating the students' personal and professional success in the Kinesiology and U-M graduate program.

The Bridge Program consists of a number of components, such as informative and insightful panel presentations featuring U-M and Kinesiology faculty, staff, and students; campus tours; team building activities; and various social and networking activities with Kinesiology and U-M faculty, staff, and students. This endeavor was a tremendous success, according to participants:

*"The bridge program for me was wonderful. I had a great time meeting everyone and it benefited me in so many ways. I was able to walk into class on the first day and see familiar faces and right away felt comfortable because I spent a few days with these*

*people. I am grateful that I was able to participate in the program because it basically made me feel at home at Michigan."*

*"It was really helpful in that it provided some useful information, gave me the chance to meet people early on, and also gave me a chance to meet some people I probably would not have met. Overall, I think it was just a great opportunity to begin creating a community at Michigan. The fact that we were all coming from different places makes that 'community creation' even more important."*

*"Summer Bridge is a unique opportunity for incoming U-M Kinesiology graduate students. I was impressed by the number of activities they organized for us.... It was an invaluable experience, because it helped me establish meaningful relationships with my colleagues. These relationships have continued to strengthen, and it means a lot knowing that I have a support tribe when academic demands are high."*

In the 2018-19 academic year, we'll offer even more programs and activities for Bridge students and add a Kinesiology Peer Partner Program (KP<sup>3</sup>) as a vital component. The KP<sup>3</sup> will match new graduate students with current graduate students and will create a pair-sharing/peer support team whereby our new students may seek advice and suggestions that will improve their readiness for personal and professional success and enhance their overall graduate education experience. With the support of Kinesiology's faculty, staff, and students the Kinesiology Bridge Program is another way in which we are living our DEI motto: KIN: ALL IN! ■

*Left: Students getting ready for the ropes course. Right: Students at the mixer. Photos: Ketra Armstrong.*



# ENDGAME

## Finding the link between telomeres, aging, and cancer

BY JEAN HUNT

When movement science assistant professor and former wrestler Dr. Andrew Ludlow began graduate school at the University of Maryland, he pursued exercise physiology with a focus on determining why some people are able to develop stronger muscles than others. Was it genetics? Biochemistry? Method of weightlifting?

His mentor, Dr. Steve Roth, tasked Ludlow with researching the relationship of exercise and telomeres, and finding out how to measure telomere length. After discovering what telomeres were, and what they did, Ludlow decided they were “quite fascinating.”

Fascinating, yes—and for Ludlow, an exciting new focus for his research. “During my Ph.D. I continued these studies of how exercise impacts our DNA structure and function,” he says. “In one project I was studying the ends of our chromosomes that keep our DNA and genes safe. These ends are called telomeres. By the end of my graduate career I had become very passionate about telomeres and telomerase [an enzyme associated with telomeres] and how they can impact both aging and cancer phenotypes.”

Now that he has his own lab, the Integrative Molecular Genetics Laboratory (IMGL), Ludlow and his post-doctoral trainee, Dr. Mohammed Sayed, study the relationship between aging and cancer, and how our DNA and genes are regulated (or dysregulated) in those processes.

“The Integrative Molecular Genetics Laboratory aims to understand telomere biology in stem cells, aging, and cancer,” Ludlow says. “We hope to develop exercise and diet interventions and drug and small molecule therapies to manipulate telomere biology in aging and cancer.”

The lab’s current research projects include “Cancer, telomeres, and lifestyle (diet and exercise): Is there a connection?” and “Telomere length induced changes in gene expression: mechanistic role in metabolism and aging.” Current grants include one from the National Institutes



*Dr. Andrew Ludlow in the Integrative Molecular Genetics Laboratory. Photo: Austin Thomason/Michigan Photography.*

of Health, National Cancer Institute (NIH/NCI), which awarded their Pathway to Independence Award for his project, “Manipulating hTERT (human telomerase reverse transcriptase) splicing in lung cancer cells.” Ludlow adds, “There’s maybe three labs worldwide that are studying hTERT splicing. We are testing potential interventions that manipulate hTERT splicing and telomerase activity.”

So what would Ludlow like to contribute to this emerging field in the science of aging and cancer? “One, show that telomerase, because it’s specific to most human cancers, can be used as a model gene to find other pathways to target in cancer cells. The second is discovering a way to inhibit telomerase, to stabilize tumors in remission. Third, develop interventions that maintain telomeres and prevent the onset of age-related diseases.”

Ludlow’s current affiliations include the American College of Sports Medicine and the American Physiology Society. He hails from Stroudsburg, PA, which is about 75 miles west of New York City. He is married to Kinesiology alum Lindsay Wohlers (SM ‘07), and they have a 3-year old daughter, Avery, with another child due in late summer. ■



# Crew Review

## WEARABLE TECHNOLOGY HELPS ROWING TEAM GET A LEG UPON THE COMPETITION

BY JENN MCKEE

“Smart” leggings? They’re here.

And thanks to movement science junior Erika Yasuda’s Undergraduate Research Opportunities Program (UROP) project, U-M’s women’s rowing team (of which Yasuda is a member) is now getting the chance to learn from them.

“My coach is a huge junkie on everything that has to do with data,” said Yasuda, a junior studying movement science. “He loves statistics. I thought, ‘Hey, why don’t I try to see if we could use this wearable tech with the rowing team?’”

The leggings, produced by a company called Athos (based in Yasuda’s home state of California), have embedded surface EMG sensors, which send muscle activity data to a core that snaps into the leggings. The core processes the information, and an iPhone app allows someone to monitor the muscle activity of the person wearing the leggings in real time.

The information that’s gleaned may be used for the purposes of coaching, improving performance, injury prevention and recovery, and more.

“For the first set, I’ll have [rowers] just do what they normally do ... to get a baseline,” said Yasuda. “Then, from there, I’ll show the coach, and then the coach will look at it and

go, ‘Okay, let’s see if we can change this particular muscle recruitment pattern. I want more from the right glute, or I want more from the left glute.’ ... So, we’ll see if [the rower] can hit that on their own.”

Yasuda’s research has focused on monitoring rowers’ hamstrings, the glutes, and inner and outer quads—and “what’s cool about these leggings is, it also shows us left versus right, if there are any imbalances with that.”

Some observations took Yasuda by surprise, including the fact that rowers’ glute activity often wasn’t as high as everyone expected, and that “between individual rowers, there’s a lot of variability when they’re at a moderate intensity, which is what we call ‘steady state,’” said Yasuda. “... At the higher intensity, their muscle activity patterns seem similar. But at steady state, or moderate, they’re all very different.”

Yasuda became interested in movement science after tearing both of her ACLs while playing basketball in high school.

“After that, I would obviously see my sports medicine doctor on the regular and go to physical therapy,” said Yasuda.

“I just knew that I wanted to stay in the sports realm.

Science, in terms of anatomy, was super-interesting to me. When I looked up ‘kinesiology at U.S. college,’ University of Michigan was one of the first ones to come up. So out of the



four majors here, I just thought, if I want to go on the med school track, movement science would be a great one.”

Yasuda may be even closer to her dream after winning the Outstanding Research Presentation Award at the 2018 UROP Spring Symposium.

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**“At the higher intensity, [individual rowers’] muscle activity patterns seem similar. But at steady state, or moderate, they’re all very different.”** —ERIKA YASUDA

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“I never would have thought that this would have given me insight on injuries specifically,” said Yasuda. “I thought it was just a muscle activity. Like, you’re healthy, let’s just see which muscles you’re using. But in terms of the stress that you’re putting on your body, I think tracking training load as well as intensity could really help in the future, especially if I would like to coach someday as well.”

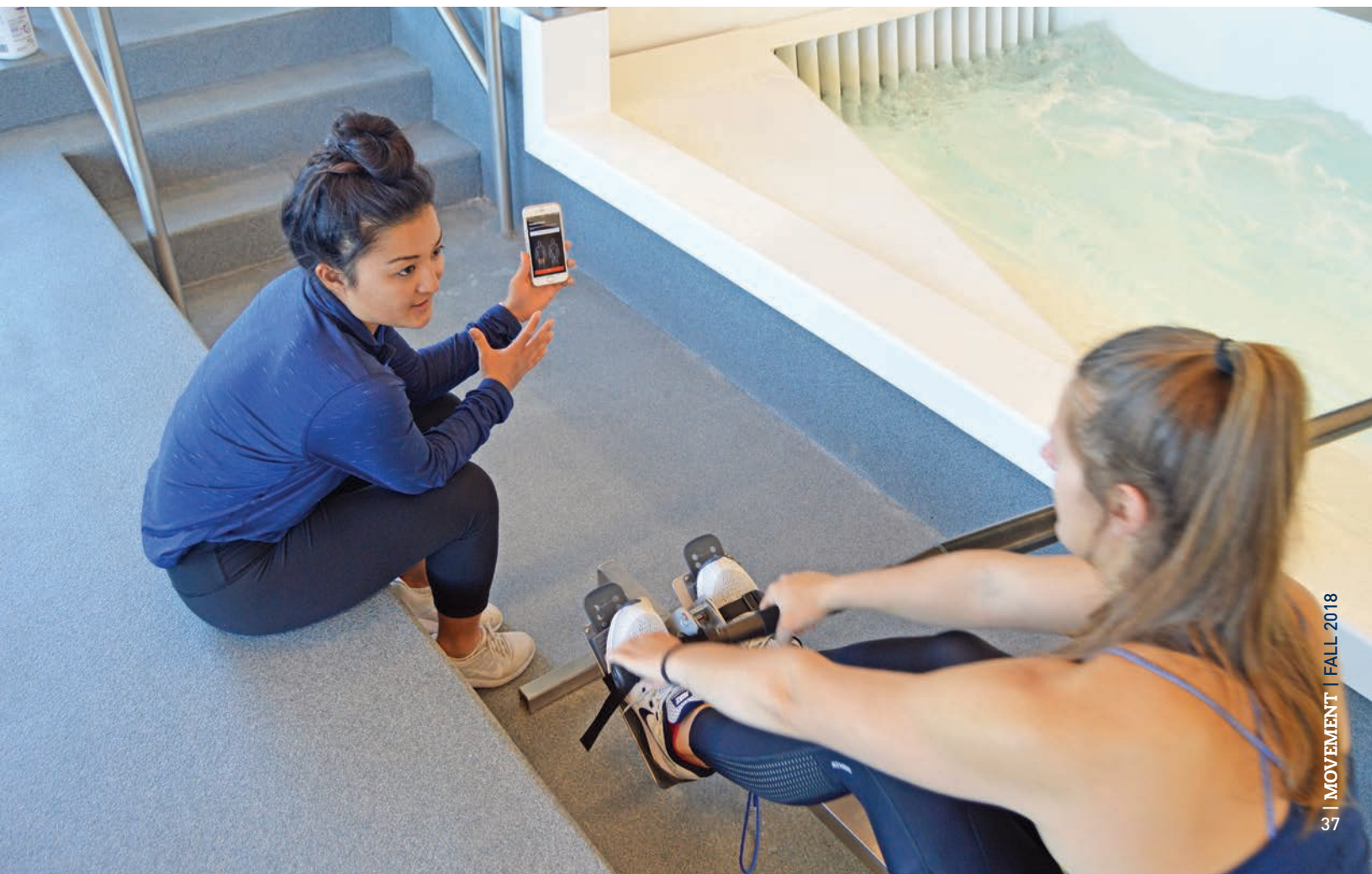
Wearable tech, of course, is already becoming more mainstream. U-M’s Sports Analytics Club will likely be using it to collect more and more data from a broad range of U-M teams; and one rower at the University of Washington—home of last season’s NCAA title winning team—credits the Athos-produced leggings with her quick recovery from an injury.

Knowing that UW was using the leggings, too, “made me feel better, actually, about it,” said Yasuda. “Because at first, when we started working with Athos, we really weren’t sure how—since they were so new, we weren’t sure how accurate or valid [the leggings would be], or if other teams or organizations were really trusting what they were doing, either. So it helped me buy into it a little more, I think, to know that another school was using it.”

Yasuda’s teammates, meanwhile, have been anything but hesitant.

“Every week, I’ll have a different teammate go, ‘Hey, I saw you had the leggings. Can I be the next on the list to wear them?’” ■

*Erika Yasuda shows fellow women’s crew team member Katherine Burns how the smart leggings work. Photo: Emily Mathews.*



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# FIELD NOTES

## CAREER CENTER BOOSTS STUDENT OUTCOMES

BY AMY FREDELL

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The Kinesiology Career Development Center had its best year yet since the grand opening in January 2016! Students, employers, and alumni are engaging, interacting, and making connections.

774

students from all degree levels and disciplines logged into KINNECTIONS, the school's job posting system

360

students attended a career program

240

students met with a career advisor

119

students were interviewed by employers on campus

Are you interested in helping a student gain insights into career options, land an internship, or provide invaluable advice needed in today's workplace? If so, please reach out the career center at [KinesCareers@umich.edu](mailto:KinesCareers@umich.edu) to discuss ways to engage with students.

*An employer and a student at the 2018 School of Kinesiology Career Fair. Photo: Eric Bronson/Michigan Photography.*





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# Welcome hoMe.

Come to our **homecoming open house** on **Friday, 10/5**, from **4:30-7:30pm**, right next to the Kraus building on the Diag. Festivities include a groundbreaking ceremony, alumni awards, snacks, school swag, and more! RSVP at [myumi.ch/aVVv7](http://myumi.ch/aVVv7).

