DEPARTMENT OF KINESIOLOGY & SPORT MANAGEMENT

TEXAS TECH
College of Arts & Sciences

KSM NEWSLETTER

FALL 2024 EDITION

IN THIS ISSUE

SPARC
SPORT PROFESSIONAL ADVANCEMENT AND RESOURCE CENTER

Dr. Katie Brown and Senior Lecturer Ashley Harry have co-founded the Sport Professional Advancement & Resource Center, SPARC. SPARC's mission is to ignite the passion for excellence within sport management students by providing innovative resources, cutting-edge training, and unparalleled support, empowering them to reach their highest potential in the dynamic field of sport management. The center will host podcasts from both students and Sport Management faculty and serve as a space where students can prepare for jobs in the field.

Welcome New KSM Faculty

Dr. Jennifer Corder

Jennifer Corder is excited to join the Department of Kinesiology and Sport Management as an Assistant Professor of Practice. She earned her BS of Exercise Sports Science and BS of Nutrition Science at Texas Tech University followed by her MS of Athletic Training at Weber State University. Jennifer returns to Texas Tech after serving as an Athletic Trainer at Keller High School where she served student athletes for all sports as well as mentored a team of athletic training students.

Dr. Jessica Brougham

Dr. Jess Brougham joins the Kinesiology and Sport Management as an assistant professor after earning her Ph.D. in Sport Management from the University of Florida.

Meet the PhD Students

This fall KSM welcomed seven new PhD students!

Dr. John Harry welcomed Anton Simms (left) and Mia Hite (right) into the Sport & Occupational Neuromechanics Laboratory. Check out the lab page here!

Dr. Joaquin Gonzales welcomed Gabriel Narvaez to the Vascular Aging Laboratory. Check out the lab page here!

Dr. Jacob Mota welcomed Payton Miller to Neuromuscular and Occupational Performance Laboratory. Check out the lab page here!

Dr. Kembra Albracht-Schulte welcomed Golbarg Shabani to the NExT Medicine Laboratory. Check out the lab page here!

Dr. Yasuki Sekiguchi welcomed Kyle Jean (left) and Mario Hernandez (right) to the Yasuki Sports Performance Lab. Check out the lab page here!

KSM Ambassadors Service Projects

Back row (L to R): Jamar Brooks, Josel Solis, Sophia Concepcion, Jacklyn Bounds, Jacob Jones, Max Smith, Dr. Chad Smith
Front row (L to R): Meredith Schlaefer, Rachel Rever, Sophie Carnes

In April the Ambassadors participated in the Burkhart Walk for Autism and the University Arbor Day. They also participated in a STEM night where students were able to test their broad jump skills and grip strength. The Ambassadors also hosted their third annual volleyball tournament sponsored by Cardinal's Sport Center, which was won by team Glute Sets! The Ambassadors also designed and sold new apparel for the department, which was a big hit!

Scan the QR Code to follow us on Instagram!

(L to R): Elizabeth Gorecki, Averie Phillips, Jacklyn Bounds, Sophie Carnes, Damian Ramirez

For the 2024-2025 academic year, the Kinesiology and Sport Management Ambassadors welcomed 11 new members! To date, for the Fall semester, the Ambassadors have assisted with several student recruitment and campus events including the Texas Tech Preview, Arts & Sciences Day, and Texas Tech's Family STEM night. They volunteered at the Lubbock Pumpkin Trail at the Lubbock Memorial Arboretum and also participated in Tech or Treat, which allowed children and their parents to get into the Halloween spirit while being active. The Ambassadors participated in the Walk to End Alzheimer's at Adventure Park to raise money for a great cause and volunteered at the Texas South Plains Honor Flight where they welcomed and socialized with the veterans and their families, among other duties. The Ambassadors also held a fundraiser at Panda Express in September and are currently working on new apparel designs which will be available for purchase in the Spring 2025 semester.

FACULTY SPOTLIGHT

Dr. Marc Lochbaum Traveled to Lithuania

Dr. Lochbaum traveled to Lithuania in September. He lectured with his longtime Lithuanian colleague, Aušra Lisinskienė, on performance psychology. Their seminars were full-day events. At the seminars, Lithuanian Paris 2024 Olympic and Paralympic athletes interacted with the seminar participants.

While on his trip, Dr. Lochbaum visited up-and-coming golfers. Dr. Lochbaum along with Cassandra Sisneros continued publishing together, with their latest meta-analyses concerning achievement goal theory and well-being and sport performance.

Dr. Lochbaum's second meta-analysis was accepted in November 2024. Read about it here!

KINESIOLOGY FACULTY AWARDED R01 & NSCA GRANTS

DRS. DANIELLE LEVITT & HUI-YING LUK AWARDED $3.5 MILLION NIH GRANT

Aging people with prediabetes are at increased risk for frailty and type 2 diabetes (T2D). Skeletal muscle architectural factors could underlie frailty development and progression from prediabetes to T2D. While exercise training (e.g., HIIT) can improve skeletal muscle architecture, the magnitude of beneficial training-induced adaptations decreases with age. To address this, Drs. Hui-Ying Luk and Danielle Levitt received a 5-year, $3.5M, multi-PI grant from the NIH/National Institute on Aging titled "Glycemic control and frailty risk in older people at risk for type 2 diabetes: Impact of local heat therapy" (R01AG084597). Additional contributing TTU faculty include Drs. Heather Vellers (collaborator) and Fangyuan Zhang (co-investigator, Department of Mathematics). These studies will test local heat therapy as a method to improve skeletal muscle architecture, glucose tolerance, and frailty indicators in older adults with prediabetes, and to determine whether heat pre-conditioning improves adaptation to subsequent exercise training. TRPV1 will be tested as an underlying mechanism. They anticipate that data generated will provide evidence supporting a directly translatable, easily implemented therapeutic intervention to ameliorate risk of developing frailty and overt T2D in at-risk aging individuals.

DR. DANIELLE LEVITT WAS AWARDED A $25,000 FROM NATIONAL STRENGTH & CONDITIONING ASSOCIATION FOUNDATION

Resistance training (RT) is a primary intervention to prevent and treat sarcopenia in older adults. Strategies to overcome anabolic resistance are needed to maximize RT adaptations in this population. Results from preclinical studies show promise for resveratrol supplementation to become one such strategy. To translate preclinical findings and to better understand the underlying physiology, Dr. Danielle Levitt was awarded a $25k, 2-year Young Investigator grant from the National Strength and Conditioning Association Foundation (NSCAF) titled "Resveratrol-mediated changes in extracellular vesicle microRNA cargo as a novel contributor to resistance training-induced skeletal muscle adaptation in older adults". Additional faculty include Drs. Jacob Mota and Arturo Figuroa (co-investigators). MicroRNAs (miRs) are small non-coding RNAs that can repress gene expression, and they have emerged as key factors in sarcopenia development and progression. These small RNAs can be carried between cells via extracellular vesicles (EVs). Therefore, our studies will determine RT- and resveratrol-mediated changes in the miR profile of circulating EVs and and assess their relationship with skeletal muscle adaptations to RT in older adults. We anticipate that data generated will provide applied and molecular evidence to support resveratrol supplementation to improve older adults' RT adaptations.

Kinesiology Faculty Awarded Texas University Funds (TUF)

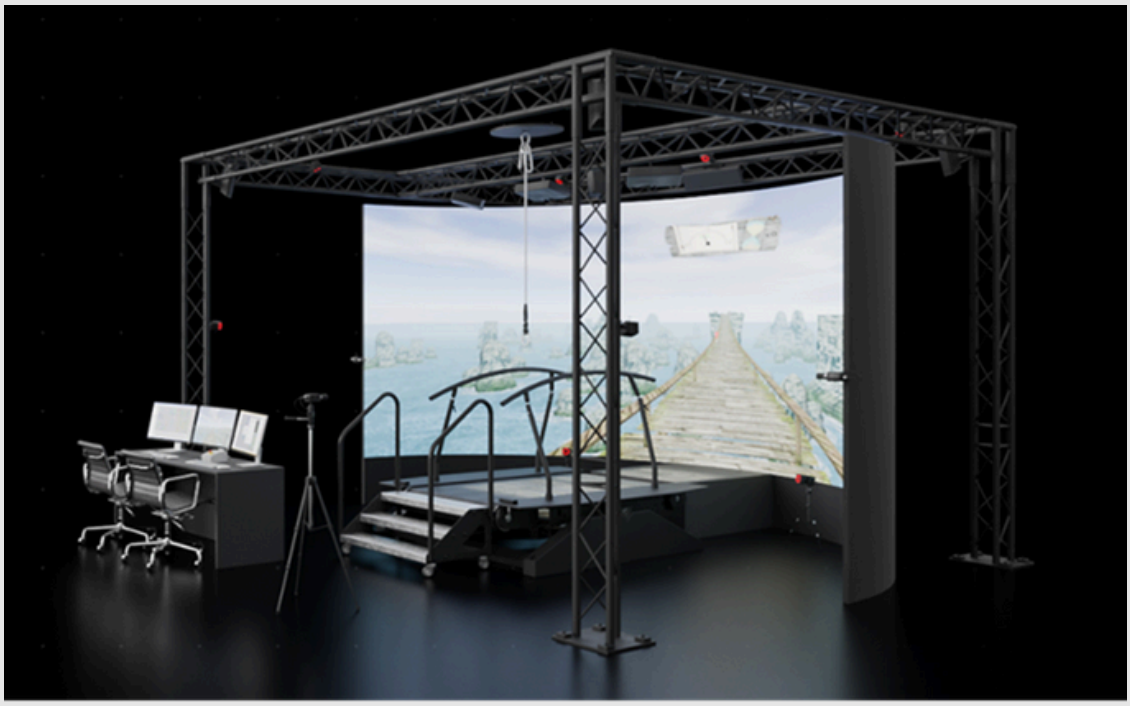

Figure 1. The Motek GRAIL system.

Dr. John Harry was awarded a $24,080 Directed Research Grant from the National Strength & Conditioning Association (NSCA) Foundation for his project titled, “Exercise Intensity Benchmarking and Performance Effect Comparison Between Momentum- and Velocity-Based Training Methods in Collegiate Men's and Women's Basketball Players.” The project will explore the effectiveness of a momentum-based training protocol compared to a conventional velocity-based training protocol to identify the ideal approach to improve explosiveness in basketball athletes. The project will begin in the Summer of 2025.

Dr. Harry was also awarded $607,299 from the Texas University Fund (TUF) to purchase the Motek GRAIL, an immersive gait training and assessment laboratory. Pictured above, this laboratory system is considered the ultimate gait-lab solution. GRAIL, which stands for “Gait Real-time Analysis Interactive Lab” is a multi-instrument system that includes an immersive virtual reality environment, a three-dimensional motion capture system, and an adaptive force-instrumented treadmill to perform functional gait analysis in challenging environments that mimic real-life scenarios. The system will also provide an environment where Dr. Harry and his team in the Sport & Occupational Neuromechanics Laboratory can use advanced virtual and augmented reality for a range of gait and balance training applications. The GRAIL system will be installed and ready for use in Summer 2025.

Kinesiology Faculty Awarded Texas University Funds (TUF)

Through the generous investment from the Texas University Fund (TUF), Drs. Mota and Tinsley were recently awarded $220,000 for the acquisition of a peripheral quantitative computed tomography (pQCT) device. This imaging device, often referred to as a "tabletop CT scanner" is similar to a full-sized CT scanner, except this machine is smaller and designed for imaging only peripheral limbs (i.e., arms, legs). The pQCT device uses low-dose X-rays to assess bone density, in addition to muscle and fat tissue composition. To our knowledge, Texas Tech University is the first institution in Texas to have this capability which will be available by Summer 2025. It will be housed in 113 Kinesiology & Sport Management Building adjacent to a new IDEXA purchased by the department.

STUDENT SUCCESS STORIES

Christian Rodriguez, a fourth-year doctoral candidate working with Dr. Grant Tinsley, recently published a first-author article entitled, "Skeletal muscle estimation: A review of techniques and their applications" in the Journal of Clinical Physiology and Functional Imaging. This review article relates to Rodriguez's research interests in skeletal muscle evaluation and describes a variety of techniques used to assess skeletal muscle in humans, including computed tomography, magnetic resonance imaging, peripheral quantitative computed tomography, dual-energy X-ray absorptiometry, Brightness-mode ultrasound, bioelectrical impedance analysis and anthropometry. Several members of the KSM faculty also contributed to this article, including Dr. Jacob Mota, Dr. Ty Palmer, and Dr. Grant Tinsley.

Heimo Schaflechner, a recent graduate of Texas Tech University's Master of Science in Sport Management program, and his research advisor, Dr. Hoyoon Jung, published an article titled "Evaluating the Effectiveness of Penalty Kicks in the UEFA Champions League: Optimal Techniques and Directions for Scoring Success" in the Journal of Data Analytics. The study examined 243 penalty kicks from five UEFA Champions League seasons (2018/2019–2022/2023), finding that shots aimed at the center and upper areas of the goal were the most successful. This research offers valuable implications for coaching practices, player training, and analytical frameworks in high-pressure soccer scenarios.

During his time at Texas Tech, Heimo worked with the Promotions & Fan Engagement department of Texas Tech Athletics and served as a research assistant in the Department of Kinesiology and Sport Management. Heimo is currently working as a tennis coach in his home country of Austria. His interest in sports analytics deepened during Dr. Jung's SPMT 5344 Applied Issues in Sports Analytics course, where he began his research on penalty kicks. In this course, he developed key skills in data collection and statistical analysis, which laid the foundation for his work. Building on this initial research, Heimo continued to refine his study, eventually developing it into a journal article. His passion for soccer motivated him throughout the process, enabling him to apply his analytical expertise to a topic that was both personally meaningful and professionally significant.

Christine Florez, a second-year Ph.D. student working with Dr. Grant Tinsley, recently published a first-author article entitled, "Body composition estimation from mobile phone three-dimensional imaging. Evaluation of the USA army one-site method" in the British Journal of Nutrition. Florez brought unique experience to the project through her background as a veteran of the United States Army. Her research article described the implementation of smartphone-based 3D scanning to capture the anthropometric information required to estimate body fat percentage using the United States Army's new prediction equations. The accuracy of this method was compared to two reference methods – dual-energy X-ray absorptiometry and a 4-compartment model. While continued research is needed, the article concluded that smartphone-based 3D scanning provides opportunities for automated body fat estimation in military settings.

2024 Three Minute Thesis Competition

Texas Tech University's Graduate School hosted its annual Three Minute Thesis competition this fall during the first week of October. The competition is a chance for students to share the greater impact of their research with a general audience. Students must connect why their research matters to everyday people. This year's first-place winner was Kelly Elliott, a second-year kinesiology (KSM) master's student.

For the competition, Kelly presented her study on the effects of hydration status on the neuromuscular performance of athletes, specifically soccer players. Kelly loved the opportunity to talk about her research. "Having my research be both scientific and understood by people who aren't in my field is so important," Kelly said. "This research can be applied to many different populations, and if we find more impactful results, I will want more people to know about it and benefit from it." The KSM Department is extremely proud of Kelly and her accomplishments. Congratulations Kelly!

"Getting to be a student intern for Texas Tech Athletics Media & Communications is such a dream! As well as becoming a Campus Content Creator for the Big 12 specifically photography. This opportunity pushes me to become the best version of myself and polish my skills that will benefit my future. I have experienced numerous events from shooting the Big 12 baseball tournament in Arlington to winning a National Championship with Indoor track in Boston. The Sports Management Program has helped me tremendously by meeting individuals and creating connections as well as learning how to be an advanced sports professional while doing my job as a social media intern. Upon graduation, I know that my time at Tech will help me grow and exceed the expectations that a job may offer."

Savannah Valentine, SPMT
Undergraduate Student