

RESEARCH AT THE AHPRC



The official newsletter of research at the Athletic and Human Performance Research Center

Vision

An internationally recognized center committed to transforming lives by optimizing athletic and human performance across all ages and abilities.

Here at the 'PRC':

Welcome to the first newsletter of the AHPRC, also referred to as the 'PRC' ('park')! In 2018, Vice President of Research, Dr Jeanne Hossenlopp, appointed yours truly as Planning Director of Research in the AHPRC. The doors to the 'PRC' opened in March 2019, and the commissioning of the AHPRC building and research space occurred on April 29th, 2019. Along with the valuable support of a Marquette AHPRC Advisory Board, we have had the privilege of developing a strategic plan and instigating programming to elevate and establish collaborative human performance research at Marquette. Our global goal at the AHPRC is to **facilitate interdisciplinary, collaborative and innovative research to understand and enhance performance in athletic, healthy and clinical populations across the lifespan while providing educational and training opportunities for the Marquette community.** This vision embraces all individuals. Several key initiatives are already in motion involving students and faculty across multiple colleges including:

o **AHPRC Pilot Research Grant program:** four \$15000 research grants were awarded in 2018 to study the best strategies to enhance human performance in student athletes, people with Type 2 diabetes, stroke survivors and people with concussion.

o **Two summer undergraduate research fellowships (SURF)** were awarded (May-August 2019) to students in exercise physiology and engineering who conducted research on the caregivers of children with autism and adaptive athletes in the research space.

o **Three National Institute of Health affiliated grants** are being conducted in the AHPRC space on people with stroke, fibromyalgia and African American men who are prostate cancer survivors.

Since opening our doors, we have hosted numerous seminars, workshops and tours from groups within and beyond Marquette. We also hosted a 7-week Marquette Summer Research Institute, that supports and develops mid-career research faculty. Other events are highlighted throughout the newsletter.

Finally, we value your input and support. Keep up to date with the exciting opportunities at the AHPRC and the latest findings on human performance and the benefits of exercise by visiting our [web page](#), connecting with us on social media and becoming a member of the AHPRC.

Join the AHPRC research team [see Pg. 2] as we strive to be the difference at Marquette and beyond.

Sincerely,
Sandra Hunter, PhD
AHPRC Planning Director and
Professor in Exercise Science



'18 -'19 PILOT GRANT WINNERS

Lead Investigators:

Drs. Allison Hyngstrom (Physical Therapy) and Matt Durand (MCW)

Dr. Kristof Kipp (Exercise Science)

Drs. Kathleen Lukaszewicz (Physical Therapy) and Jonathon Senefeld (Exercise Science)

Dr. Robert A. Scheidt (Biomedical Engineering)

'19 SUMMER UNDERGRADUATE RESEARCH FELLOWSHIP (SURF): AWARD WINNERS

Syed Hussain (BEIN) - Advisor: Dr. Jacob Rammer (BEIN)

June Wang (EXPH) - Advisors: Drs. Abir Bekhet (NURS), Norah Johnson (NURS), Alexander Ng (EXPH)



Research Lab Manager Mike Haischer explains the collaboration between research and athletics at the July 2019 AHPRC open-house event

RECENT EVENTS

- **(WUWM) NPR interview** with Dr. Hunter discussing exercise in space
- **Journal Club Graduate Student presentations** in Exercise and Rehabilitation Sciences
- **AHPRC Open-house** connecting researchers, educators and community members looking to progress research.
- **TEMPO Milwaukee Women's Affinity Alliance** networking meeting

SURF: Exercise for Autism-Caregivers



AHPRC Summer Undergraduate Research Fellow, June Wang (center), coaches participants through step aerobic routines as part of the exercise intervention.

Spotlight on Student Research: Featuring June Wang (EXPH) as recipient of the AHPRC Summer Undergraduate Research Fellowship (SURF)

Caregivers of persons with autism spectrum disorder (ASD) likely experience different barriers and facilitators to regular exercise than most of the general population because of the time, energy, and other resources that are devoted to caregiving. Through an AHPRC Summer Undergraduate Research Fellowship, student June Wang (EXPH) (with the aid of Emily Zint (BISC) who is in the College of Health Sciences Summer Undergraduate Research program) assessed these barriers and facilitators, while evaluating the health of caregivers of persons with ASD. Under the direction of Dr. Norah Johnson (NURS), Dr. Abir Bekhet (NURS), Dr. Alex Ng (EXPH), Dr. Mauricio Garnier-Villarreal (NURS) and Dr. Amy Van Hecke (PSYC), June led an eight-week exercise program for these research volunteers in the AHPRC research exercise laboratory. The student-led sessions included both aerobic exercise and resistance training, such as step aerobics, dance, kick-boxing, cycling, and walking, dumbbell exercises and resistance bands in a circuit-based program. Physical and mental health were assessed before and after the program.

Participants in the exercise program reported improved energy levels and greater confidence about their ability to regularly engage in exercise. Recently, the local CBS affiliate featured the exercise intervention as a part of a larger discussion of ASD. Visit <https://www.cbs58.com/news/marquette-university-research-team-continuing-research-with-exercise-classes-for-parents-of-autistic-children>.

"This research with caregivers of persons with autism spectrum disorder is a wonderful example of a study and initiative that directly fulfills the mission of Marquette University and more specifically, the AHPRC, which is to optimize performance of people of all ages and abilities", says Dr Sandra Hunter, who is currently the Planning Director at the AHPRC. Hunter adds that, "Several of the AHPRC strategic plan [\[https://www.marquette.edu/innovation/ahprc-strategic-plan.php\]](https://www.marquette.edu/innovation/ahprc-strategic-plan.php) objectives are to provide educational and leadership opportunities for the students, as well as engaging the outside community, while enhancing the health, well-being, and physical performance of people of all abilities. This project encompasses all those objectives. The study also represents another major pillar of our strategic plan which is to elevate collaborative team science by bringing together research scholars across several disciplines and colleges to solve problems and create new opportunities that otherwise would not have been possible."

Exercise is Medicine[®] On Campus



Marquette University

No matter your fitness goal, it is important to stay up-to-date on the latest news in exercise. Visit this **Exercise is Medicine** corner to learn what exercise physiologists are saying. This corner will be presented by the Director of the HPAC, the AHPRC sister site, and Marquette Clinical Assistant Professor Toni Uhrich.

The Power of Physical Activity: Exercise IS Medicine

The American College of Sports Medicine (ACSM) and the US government recommend 150 minutes as a weekly 'dose' of physical activity. All movement counts and the benefits are far-reaching. Even the smallest increase in physical activity can benefit health, not only long term, but immediately. For example, those with type 2 diabetes can benefit immediately from improved insulin sensitivity. Other benefits, attainable from even a single bout of activity, include reduced anxiety and blood pressure, and improved quality of sleep.

Fun Fact:

HIIT can also help! Haven't heard of High Intensity Interval Training? It was named the #1 Fitness Trend in 2018. The important idea behind all forms of HIIT is providing an intense phase of exercise followed by a period of recovery. Each phase can range from a few seconds to a few minutes and are conducted across a range of intensities.

<https://www.acsm.org/blog-detail/acsm-blog/2017/10/26/interval-based-exercise-many-names-possibilities>

Check back in a future issue for more specifics or follow this link for Physical Activity Guidelines. <https://www.hhs.gov/fitness/be-active/physical-activity-guidelines-for-americans/index.html>

WHO'S WORKING THE AHPRC?

We are proud of the AHPRC Team. [Meet the Team!](#)

Planning Director: Dr. Sandra Hunter, Ph.D., FACSM

Research Lab Manager: Mike Haischer, M.S., CSCS

Director, Human Performance Assessment Core: Toni D. Uhrich, M.S., EP-C

Graduate Staff: Casandra Goodrich, B.S., CPT

Undergraduate Staff: Rachel Beilfuss, EXPH 20, DPT'22

FEATURED AHPRC TEAM MEMBER



Graduate Staff: Casandra Goodrich, B.S., CPT
Casandra graduated from Marquette University in 2019, completing a degree in Exercise Physiology. While an undergraduate, she competed as a sprinter for Marquette's Track and Field team, a member of the 2016 and 2017 BIG East Indoor and Outdoor Conference Championship team. Casandra currently holds eight school records at Marquette.



Casandra has since acted as an assistant coach for Marquette and is excited at the opportunity to work in the AHPRC. Her goal is to attend medical school, where she will foster her interest in pediatrics and oncology. Come fall, she will leave Marquette to continue preparation for medical school.

Casandra and Research Lab Manager Mike Haischer recently gave an interview for [We are Marquette, podcast series](#).

If you are interested in ways to engage with the AHPRC please connect with us or follow on social media! To schedule a tour, contact us:

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research_ahprc@mu.edu

<https://www.marquette.edu/innovation/research-ahprc.php>

