

Marquette University: Physical therapy professor receives \$1.9 million NIH High-Risk, High-Reward Research grant

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MILWAUKEE — Dr. Jacob J. Capin, assistant professor of physical therapy in Marquette University's College of Health Sciences, has been awarded a \$1.9 million grant from the National Institutes of Health High-Risk, High-Reward Research program for a five-year research program to evaluate the impact of prior injury and sedentary behavior as two potential determinants of later poor health and reduced function in amateur athletes.

The High-Risk, High-Reward Research program supports highly innovative research proposals that, due to their inherent risk, may struggle in the traditional peer-review process despite their transformative potential. Capin's project is an NIH Director's Early Independence Award, which provides an opportunity to support exceptional junior scientists who have recently received their doctoral degree.

Findings from "Life After Sport: Prior Injury and Sedentary Behavior as Mechanisms of Later Poor Health," will inform health care providers as they rehabilitate, counsel, and educate athletes for lasting health. The long-term goal of Capin's research program is to decrease chronic disease in mid-life and to enhance healthspans.

"I am thrilled to have this opportunity to conduct research that could benefit the over 8 million participants in competitive sport every year," Capin said. "There has been limited work on the long-term health and wellness of former athletes and most research to date focuses on neurocognitive health and/or professional male athletes, the elite few. This study will evaluate physical activity patterns,

musculoskeletal function, cardiometabolic health, and dietary intake in both male and female amateur athletes—a much larger, ubiquitous group. Our findings will ultimately inform how health professionals rehabilitate and counsel athletes for long-term health and wellness.”

This research program will establish two cross-sectional cohorts—former athletes in mid-life (age 45-64 years) and current collegiate athletes—with and without prior traumatic knee injury and non-athlete controls matched by relevant factors such as age, sex, BMI and/or sport. Participants will undergo comprehensive testing sessions and complete several brief questionnaires.

“This research project will be invaluable in providing baseline data to promote long-term health and wellness and prevent chronic disease,” said Dr. William E. Cullinan, dean of the College of Health Sciences. “This is an exciting opportunity for Dr. Capin to perform impactful research early in his career that could have long-lasting benefits for a large population of current and former amateur athletes.”

Capin came to Marquette in September 2021 after two years of post-doctoral research at the University of Colorado Anschutz Medical Campus. He received a Doctor of Physical Therapy in 2014 and his Ph.D. in biomechanics and movement science in 2019 from the University of Delaware.

“As a clinician-scientist—trained as both a licensed physical therapist and research scientist—and former collegiate athlete myself, I feel uniquely equipped to lead this innovative research program,” Capin added.

The High-Risk, High-Reward Research Program is part of the NIH Common Fund, which oversees programs that pursue major opportunities and gaps throughout the research enterprise that are of great importance to NIH and require collaboration across the agency to succeed. NIH is the nation’s medical research agency and includes 27 Institutes and Centers. NIH is a component of the U.S. Department of Health and Human Services and is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases.