

HEALTH AND HUMAN PHYSIOLOGY

HHP Newsletter

SUMMER AND FALL 2021

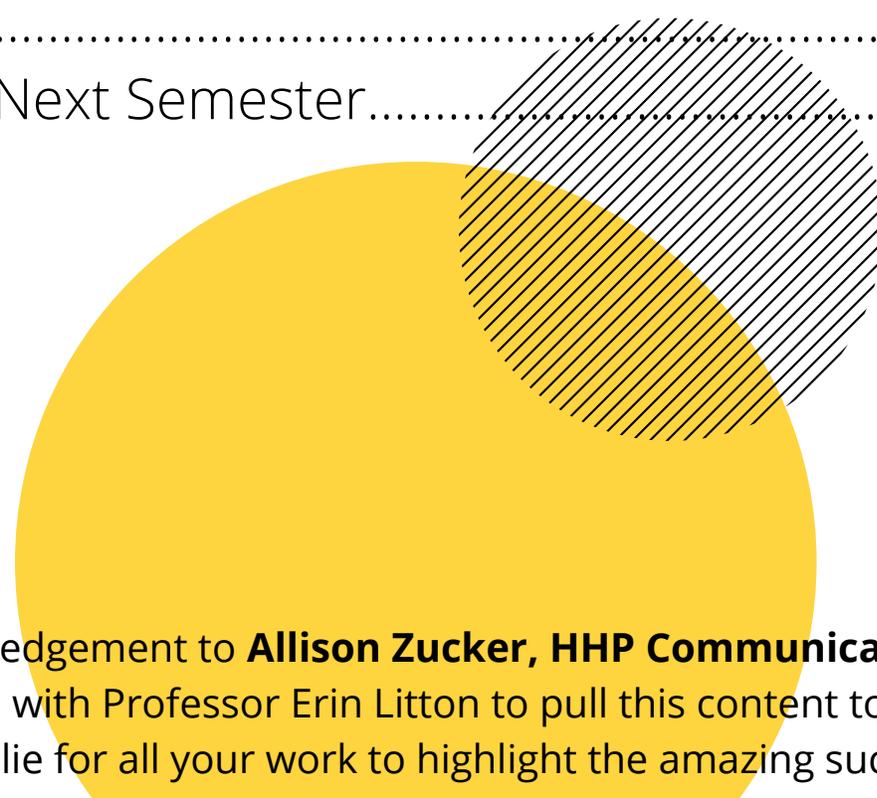


IOWA

Health and Human
Physiology

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A special acknowledgement to **Allison Zucker, HHP Communications Intern** who worked with Professor Erin Litton to pull this content together.

2 Thank you Allie for all your work to highlight the amazing success of HHP!

Warren Darling, Ph.D.

DEPARTMENT CHAIR AND PROFESSOR

In the past six months, The University of Iowa Health and Human Physiology Department has had substantial accomplishments including: several faculty receiving major external grants to fund health-related research, increases in experiential learning opportunities such as internships, practicums and community engagement opportunities for students in our four undergraduate majors. Of special note, Lecturer Bri Swope received the College of Liberal Arts and Sciences Outstanding Outreach and Engagement Award, Professors Kara Whitaker and Nathaniel Jenkins were named Fellows of the American Heart Association, Professor Melissa Bates was named Fellow of the American Physiological Society and Lecturer Gayle Walter received certification as a Master Certified Health Education Specialist by the National Commission for Health Education Credentialing.

Health and Human Physiology prepares the next wave of practitioners, educators, researchers, administrators, and managers and I believe they are ready to respond to the quickly changing and evolving health and sports industries. Health and Human Physiology is the beginning of a pipeline for health leaders that work in the state of Iowa, which makes me excited and confident for the future. This newsletter highlights our advancements and priorities; student success; research and discovery; diversity, equity and inclusion; and overall engagement.

I look forward to another semester full of work that supports health and well-being through recreation, play, research, outreach, education, and promotion.

Sincerely,

Warren Darling, Ph.D.

Professor and Chair of Health and Human Physiology



HHP Mission

We advance knowledge of health, human physiology, sport, and recreation through teaching, practice, research, and service to impact the health and well-being of people of the State of Iowa and beyond.

HHP Vision

The HHP programs aspire to be nationally and internationally recognized for advancing knowledge and preparing students to be leaders within their respective fields.

To GIVE: If you are interested in supporting the development of HHP students, please consider giving [HERE](#).

HHP OVERVIEW

Lucas Carr, Ph.D.

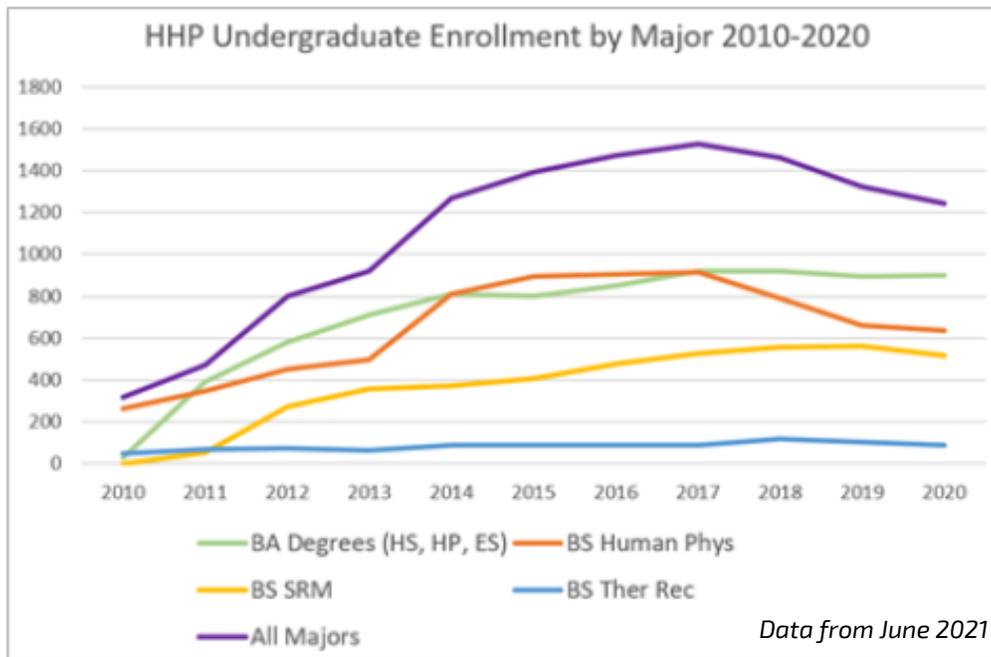


The Department of Health and Human Physiology (HHP) at the University of Iowa (UI) is a relatively new department formed in 2010 by combining three pre-existing departments (Integrative Physiology, Health and Sports Studies, and Leisure Studies).

HHP Undergraduate Program

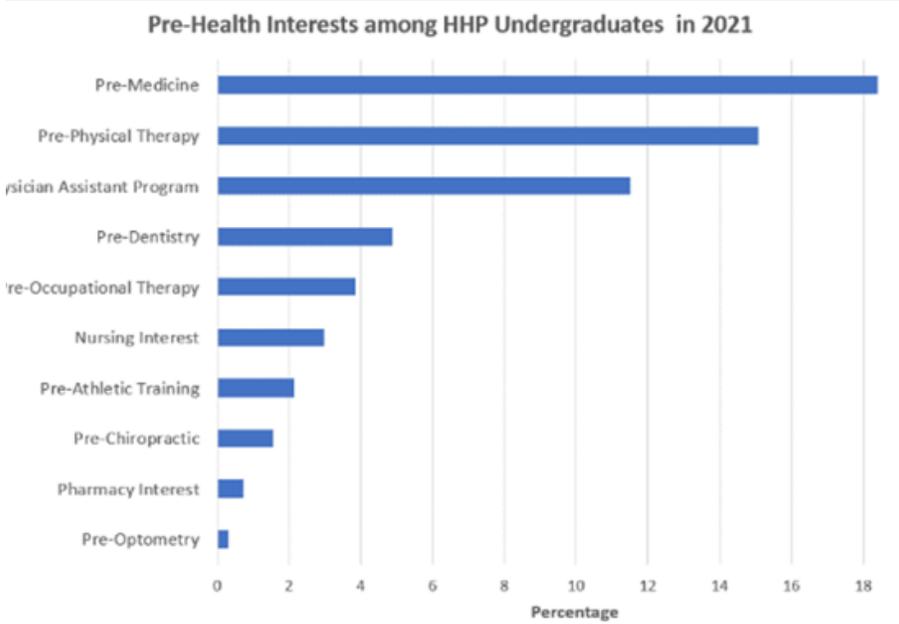
Since its inception, HHP has observed a 527% increase in undergraduate student enrollment and is now the largest undergraduate program on the UI campus with over 2146 undergraduate students! The growth of HHP is largely due to the projected growth in healthcare jobs as a result of an aging population and greater demand for healthcare services. According to the Bureau of Labor Statistics, "healthcare occupations are projected to grow 15% and add more jobs (2.4 million) than any of the other occupational group from 2019-2029." In order to prepare our students for future careers in healthcare, sport, and recreation, HHP offers the following undergraduate majors: BA in Health Studies, BS in Health Promotion, BS in Exercise Science, BS in Human Physiology, BS in Therapeutic Recreation, and a BS in Sport and Recreation Management.

HHP Undergraduate Degrees	Program Focus	Common Career Goals
BA in Health Studies	To gain a broad understanding of the major determinants of health and well-being.	Health care clinicians, public health, health care administration, medical sales
BA in Health Promotion	To gain focused understanding on how to develop effective health promotion programs.	Health coaching, health education, corporate wellness, public health, dietetics, nursing
BA in Exercise Science	To gain focused understanding on how the body responds to exercise and how to promote fitness.	Physical therapist, Occupational therapist, Athletic trainer, strength and conditioning coach
BS in Human Physiology	Pre-health professional degree that focuses on understanding physiological systems in the human body.	Physician, physical therapist, occupational therapist, physician assistant, dentist, biomedical researcher
BS in Sport & Recreation Management	To gain an understanding of the business and management operations within sport and recreation organizations.	Management positions in community recreation, high school sports, commercial fitness, professional sports
BS in Therapeutic Recreation	To gain an understanding on how to deliver recreation programs that improve health among persons with disabilities.	Recreational therapist



HHP CAREERS

The large majority of our students pursue careers in the healthcare industry including health education, health promotion, corporate wellness, allied health, healthcare, and biomedical research. In 2021, 61% of all HHP student majors declared a pre-health interest with most declaring as pre-medicine, pre-physical therapy, and/or pre-physician assistant. Indeed, HHP has become the primary undergraduate program for future health professionals in the state of Iowa. Training these future health professionals to have an understanding of the major social, behavioral, environmental, and physiological determinants of health is critical to ensure they can make major contributions to wellness and to healthcare in the future.



In 2021, 61% of all HHP student majors declared a pre-health interest with most declaring as pre-medicine, pre-physical therapy, and/or pre-physician assistant.

HP Doctoral Candidate Virginia Nuckols

Leading Research on Consequences of Preeclampsia

Summary of two recent research papers published by Virginia Nuckols, 3rd year HHP Ph.D. student in Professor Gary Pierce's lab



Virginia (Ginny) Nuckols, a 3rd year Ph.D. student in Professor Gary Pierce's lab, recently published two high impact research papers on her work in the study of the health consequences of preeclampsia. Ginny is a native of Owings Mills, MD and received her BS in Kinesiology from the University of Maryland and MS in Health and Human Physiology from the University of Iowa. Her research investigates blood pressure patterns during and after pregnancy in women who develop preeclampsia. Preeclampsia is a hypertensive disorder of pregnancy that complicates 5-7% of pregnancies in United States. Clinical signs of preeclampsia are not apparent until the third trimester, and strategies to predict or prevent preeclampsia are limited. Changes in maternal cardiovascular function may identify women who will develop preeclampsia before signs or symptoms emerge.

In her first paper published in the American Heart Association's journal *Hypertension*, Ginny and the Pierce lab reported on beat-to-beat blood pressure variability, which describes rapid fluctuations in blood pressure between heartbeats, in the first, second, and third trimester in a prospective pregnancy cohort study. Higher blood pressure variability predicted the development of preeclampsia as early as the first trimester of pregnancy beyond blood pressure alone, indicating that beat-to-beat blood pressure variability is a potential early pregnancy cardiovascular marker for preeclampsia.

In her second paper published earlier this summer in the *American Journal of Hypertension*, Ginny reported on cognitive function in postpartum women with a history of preeclampsia. Although symptoms of preeclampsia resolve after birth, women who have had preeclampsia are more likely to develop cardiovascular disease and cognitive impairment later in life. Although cardiovascular dysfunction is linked to cognitive decline with aging, the reasons for possible early cognitive aging in women who have had preeclampsia is unknown. Ginny and the Pierce lab assessed blood pressure variability throughout the day using 24-hour ambulatory blood pressure monitoring and cognitive performance in young women who had previously had preeclampsia 1-3 years prior. Women with a history of preeclampsia had lower cognitive performance than women with prior normal, healthy pregnancy regardless of education level. In women with a history of preeclampsia, greater 24-hour blood pressure variability was related to lower cognitive performance beyond average blood pressure alone, indicating that brain function may be more vulnerable to short-term rapid fluctuations in blood pressure, rather than average blood pressure, in women who have had preeclampsia.

HP Doctoral Candidate Jacob Gallagher

Leading Research on Rural Men

Jacob Gallagher is a third-year doctoral student in the Department of Health and Human Physiology (HHP) working under the direction of Dr. Lucas Carr in the Behavioral Medicine Lab. Jacob is a native of Lisbon, North Dakota (est. population 2,100), a rural town located in the southeastern quadrant of the state. Jacob received an undergraduate degree in Exercise Physiology and Psychology from the College of St. Scholastica in Duluth, Minnesota, where he also competed on the Men's Cross Country squad. Jacob then went on to receive a master's degree in Exercise Physiology from Minnesota State University in Mankato, Minnesota.

Jacob feels his rural upbringing and passion for exercise have informed his research interests, which focus on understanding and promoting the physical activity behaviors of rural men. Rural men are an understudied population, due in part to the difficulty of reaching them but also because of the general lack of research focused on better understanding their needs. Jacob hopes his research can advance our understanding in this area. And true to form, Jacob is off to a quick start! Since arriving in Iowa City in the fall of 2019, Jacob has received multiple scholarships, fellowships, and grants to support his research. Jacob was a recipient of a prestigious UI Writing Fellowship, which will provide Jacob protected time to focus on his research. Jacob has also received two research grants this year from the UI Graduate Professional and Scientific Grant Program and the UI Student Impact Grant Program.



These grants will provide Jacob funding to purchase equipment and supplies needed for his project. In addition to his dissertation, Jacob also recently published a peer-reviewed article with Dr. Carr comparing the effects of leisure and occupational physical activity on health outcomes in the *Journal of Occupational and Environmental Medicine*. This paper has already been positively received, generating an editorial letter from a group of French investigators who referred to the study as “highly interesting and well-conducted work and analysis.” Such feedback could not have come without Jacob’s hard work and statistical expertise.

Jacob is on track to complete his degree in May of 2023. His dissertation project will focus on designing and testing a physical activity intervention that is specifically tailored to the needs of rural men.

COMMUNITY ENGAGEMENT



HHP brings the Olympics to Downtown Iowa City

Students in Summer 2021 Downtown Moves Internship with Professor Erin Litton provided community outreach prior to and during the Iowa City Block Party on July 24, 2021. Students engaged in Olympic Trials while awarding medals to all participants. Students challenged visitors with a 15-yard sprint, vertical jump test, push-ups, sit-n-reach check, and hand-grip strength. Over 400 people participated in the day's events. Students celebrated health and wellness while honoring the Olympics that were occurring at the same time!

Prior to the Block Party, students created a walking challenge to visit downtown businesses and learn about Olympic Sports featured at each of the downtown businesses. Additionally, small teams of students worked with downtown businesses to provide additional support in dietary analysis, marketing, and ergonomic guidance.

Thank you to our partners this summer; Herten and Stocker Jewelers, St. Burch, Thompson & Company Salon, and Bread Garden.



DOWNTOWN IOWA CITY * JULY 2021
BE CHAMPIONS OF THE COMMUNITY

IOWA | Health and Human Physiology
Community Health Teaching Collaborative

PLAY DAYS

Can Play Sports (previously named Courage League Sports) is a non-profit adaptive sports and recreation organization that offers year-round programming for children and adults who are not able to go full speed due to a physical, cognitive, or emotional disability. Therapeutic Recreation and Child Life students help facilitate weekly adaptive sport and recreation activities including soccer, basketball, and baseball.

Learn more <https://can-play.org/our-locations/iowa-city-2/>



Adaptive Sports Day on November 11, 2021 Inclusive Recreation students participate in an Adaptive Sports Day in collaboration with Adaptive Sports Iowa. Students play wheelchair basketball, seated volleyball, wheelchair tennis, and adaptive track & field and bowling. This year was our 10th semester hosting an Adaptive Sport Day. It started on the main deck as a part of the Inclusive Rec course taught by Professor Bri Swope and as interest grew it was expanded. Now it runs from 9:00am-3:00pm and HPAS classes, faculty and students all participate.



STUDENT SUCCESS

What if an analytics tool could provide insight into students' learning to help you create a more supportive learning environment?

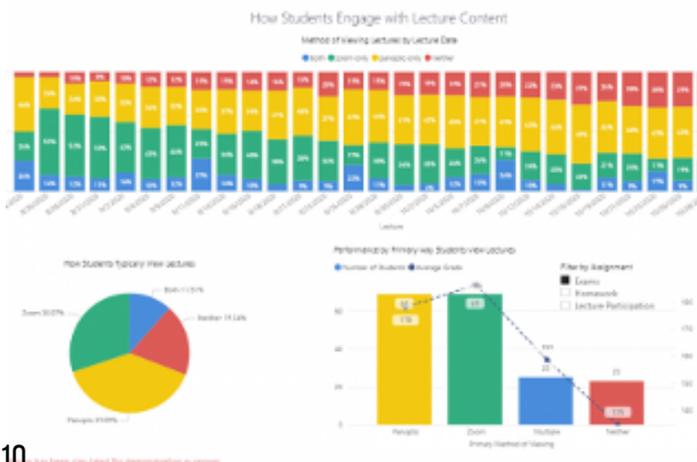
Jennifer Rogers, Ph.D.



The Instructional Analytics Dashboard (IAD)—developed by the OTLT Research & Analytics team—generates near real-time reports to answer course-specific questions so instructors can create supportive learning environments that engage students while also identifying students who may be struggling in a course.

By pulling data from multiple technology tools used in a course (e.g., ICON, Zoom, Panopto, and online homework platforms), the IAD provides instructors with a deeper understanding of their students' backgrounds and learner variability and offers insight into students' engagement with materials and tools.

With 160 students enrolled during the spring 2021 semester, the Human Physiology course serves a broad range of students, from second-year undergraduate students to graduate students. Jennifer Rogers, associate professor of instruction and program director for Human Physiology, opted to participate in pilot of the IAD for the course.



“Access to comprehensive course data in one dashboard has been invaluable,” says Rogers. “Seeing correlations between completion of course activities, and patterns of access to course materials, and exam performance was helpful for evaluating whether course resources had a positive impact on student learning. This information will be useful for future messaging to students related to learning.”

It also provided insight into student engagement during virtual teaching and learning.

“Despite class occurring via Zoom and me seeing many ‘black boxes’ instead of being face-to-face in a classroom, the dashboard showed my students were still engaged,” says Rogers. In fact, 85% or more of the 160 students in this course attended each Zoom class session and were active participants in daily activities. This was much higher than when this course met in person in previous semesters.”

Using historical data from the IAD, she could examine trends in the course to determine the effect teaching strategies had on student performance.

“It was rewarding to see that the overall D/F/W rate has decreased over time,” says Rogers. “However, using the ‘filter’ function of the dashboard to drill down by demographic characteristics revealed that some discrepancies in course performance still exist. These data will prompt me, as the instructor, to think more carefully about how to reach all students going forward.”

View Full Article at The Office of Teaching, Learning & Technology (uiowa.edu)

-BE KIND TO YOUR MIND-

HHP Student developed program serves University of Iowa Faculty and Staff



HHP:4020 Health Coaching and Communication explored mental health strategies and created an intervention that was delivered to University of Iowa faculty and staff in Fall 2021. The health intervention included a communication campaign for social media and email that supported a three-week behavioral health program of skills to improve mental health. Students in the class were highly engaged in the process. Participants in the program report positive outcomes. By highlighting our approach – creating good by doing good – we hope to inspire other collaborations.

Each week, registered participants through liveWELL received a weekly email with tips and resources for practicing positive psychology activities according to the theme for each week.

- **Week 1:** Understanding positive psychology. Increase awareness, education, and skills for positive psychology.
- **Week 2:** Positive psychology at work. Use positive psychology this week to promote overall happiness, job satisfaction, and meaningful relationships in the workplace.
- **Week 3:** Positive psychology at home. Practice positive psychology at home by creating a healthy daily routine and allowing space for your mind to let go of work stressors.

Be Kind To Your Mind

Evaluation Data from UI Faculty and Staff

n=246 respondents

As a result of my participation in Be Kind to Your Mind:

- 82%...My ability to cope with stress as increased
- 88%...My overall mindset has become more positive
- 68%...My relationships at home have improved
- 70%...My relationships at work have improved
- 73%...My ability to perform optimally has improved
- 86%...My personal well-being has improved

**1,350 participants registered for
Be Kind To Your Mind.**



"Before this experience, I did not have a full understanding of what was needed to complete a successful program. With the collaboration with LiveWELL, I feel confident I can implement what I have learned to future projects and future career!" -Alejandro Zarate, HHP Student

See more at Be Kind to Your Mind | University Human Resources - The University of Iowa (uiowa.edu).

Sport and Rec Management 2021 Symposium



The sport and recreation industry is filled with accomplished professionals eager to support the industry's next generation. Despite this, initial communication and connection for many students is an intimidating prospect and makes planting the first seeds that grow into their professional network a daunting task. In response, UISRM provides students the perfect home-field advantage to participate in career exploration and network development: the UISRM Symposium.

Monday, September 27 marked the 6th Annual UISRM Symposium and the opportunity for all UI students to learn from and network with sport and recreation professionals in a familiar and accessible environment. After a virtual event in 2020, the UISRM Club enthusiastically welcomed professionals to the Iowa Memorial Union for panel discussions, networking, and a keynote session discussing Diversity, Equity, and Inclusion in Sport and Recreation. UISRM MA alum, Broderick Binns, Assistant Athletics Director, Executive Director DEI with Hawkeye Athletics graciously delivered the keynote session that coincided with Dr. Mia Richter's Diversity and Inclusion in Healthy Living course. Furthermore, the UISRM Club streamed and recorded all mainstage and breakout sessions, increasing the accessibility and inclusivity of the event to all students.

A highlight of the day for many students was hearing from recent UISRM graduates. Four of five participants completed their BS in Sport and Recreation Management in the last twelve months with the fifth participant recently completing their master's coursework. Hannah Conlisk (Daytona International Speedway), Sam Bly (Miami F1), Michael Cope (Northwestern Recreation), Tanner Natzke (Miami Dolphins), and John Gibson (Chicago Cubs) contributed to the symposium's recent-alumni panel via Zoom. UISRM Lecturer, Packy Moran, moderated the conversation live in the IMU 2nd Floor Ballroom with his Contemporary Issues in Sport students participating with him in the IMU or via Zoom.



Broderick Binns
Named Assistant Athletics Director in
August 2021 &
Executive Director of DEI for UI
athletics in July 2020

In total, thirty-seven sport and recreation professionals participated in panel discussions, the morning's networking session, or the afternoon's field experience showcase. Professionals participating represented amateur to professional organizations with experience in areas such as revenue generation, event management, marketing, sponsorship, coaching, recreation, and more. UISRM is grateful for the passionate support of the program and the next generation of sport and recreation professionals.

Here's what contributors and participants are saying about the 2021 UISRM Symposium:

Jessica Fergesen (2021 Dr. Michael Teague All-Star Award Recipient): "Participating in the UISRM Symposium gives me a chance to meet with students one on one and give my organization a face. It's a great event to share my years of experience with the up-and-coming stars of our business. The enthusiasm the students have energizes me for the future of sports!"

Michael Ropp (BS 2015): "As an advisory board member it was so refreshing to return to campus and participate with faculty, staff, and students in person for the first time since 2019! Being able to contribute to the symposium by giving personal and professional advice during panel discussions and networking sessions was the highlight of my weekend. I love giving back to the program that helped launch my career and hope that current students were able to take away knowledge that they can apply within their own life and career."

Nathan Escobedo (ex. BS 2023): "The 2021 UISRM Symposium was the first one I have ever participated in and the key lesson that I took away from the entire event is that the resources and help from the SRM program do not stop upon graduation. The SRM program is truly a family that is willing to go above and beyond to help their people no matter the circumstances. Whether you are a current student or alumni who graduated the first year the program came to life, the faculty and staff are always willing to lend a helping hand."

Special thanks to the UISRM Club's Event Management Special Interest Group for planning and executing the 2021 event. The leadership team of Jenae Marshall and Ryleigh Collum with the help Tricia Even, Kate Cairney, Jake Heitman, and Kate Nelson delivered an exceptional event. In addition, thank you to UISRM Club leaders Nathan Escobedo and Emma Osborne as well as UISRM MA student Hannah Gardner for moderating panel discussions.



Check out the event video here!

Pregnancy, the Oldest Type of Bodybuilding

Recognizing Kara Whitaker, PhD.

Written by HHP Students Nick Schany and Meaghan O'Neil



When most people think about bodybuilding, they may imagine muscular athletes lifting extreme weight. Other people, like Kara Whitaker, PhD, believe that the most important aspects of development don't occur in the gym, but in the womb of a pregnant mother. Dr. Whitaker is an Assistant Professor in the Department of Health and Human Physiology (HHP) at the University of Iowa. She received her MPH and PhD in Exercise Science from the University of South Carolina and completed her Postdoctoral Fellowship in Cardiovascular Disease Epidemiology and Prevention at the University of Minnesota. Dr. Whitaker joined the University of Iowa HHP Department in 2018 as an Assistant Professor and has since taught courses in Physical Activity Psychology, Physical Activity Epidemiology, and Research Methods. She is currently the Director of the Physical Activity and Women's Health Lab, where she oversees a Postdoctoral Research Scholar and many graduate and undergraduate students. In 2020 she was awarded a five-year grant of \$3.5 million from the National Heart, Lung, and Blood Institute. She's used this grant to connect with faculty at other programs, to hire staff, and to pursue new avenues of research. One study that served as pilot work for this grant, published in the journal *Children* in July of 2021, is titled, "Maternal Sedentary Behavior and Physical Activity across Pregnancy and Early Childhood Motor Development." This paper investigates the relationship between the physical activity in pregnant women and the motor development in their children.

Over the course of her career Dr. Whitaker has become extremely passionate about improving

women's health. She's one of University of Iowa's leading researchers on physical activity and its impact on maternal health. She has been either the lead author or co-author of 27 publications in 2021 alone, and her research has been cited 1,117 times. While Dr. Whitaker specializes in physical activity, sedentary behavior, epidemiology, cardiometabolic health, and behavioral interventions, she is particularly interested in physical activity during pregnancy. Thirteen of her 27 publications this year investigated pregnancy and health behaviors. In the aforementioned article Dr. Whitaker investigates the effects of maternal sedentary behavior (SED) and moderate-to-vigorous intensity physical activity (MVPA) on early childhood motor development. SED includes activities, such as sitting or lying down, that result in lower levels of energy expenditure. MVPA are actions that result in an increase in heart rate and higher levels of energy expenditure. Lower childhood motor development increases the risk of obesity and reduced fitness later in life. To examine the effect of maternal activity on offspring motor development, Dr. Whitaker measured the SED and MVPA of 70 mothers over the course of their pregnancies. Maternal SED was measured by a thigh-mounted monitor that was only removed while swimming. Maternal MVPA was measured using a waist-worn monitor during waking hours. Once their child was between the ages of 13-30 months, the mothers were given the Early Motor Questionnaire to provide details about the children's fine and gross motor skills, as well as their perception. With this data Dr. Whitaker and her team were able to uncover relationships between SED and MVPA in pregnancy on the development of children

Specifically, they concluded that higher levels of MVPA across the first and second trimesters of pregnancy significantly corresponded to more advanced fine motor (small muscle group control) and perception-action (physical response to visual stimuli) skills. However, the study's results also suggested that maternal SED does not negatively impact childhood gross motor, fine motor, or perception skills. These results are important because no research has been done on SED and its impact on childhood development. Dr. Whitaker states that because there is not much research regarding physical activity and sedentary behavior in pregnant mothers, she is hoping her research can "identify optimal movement patterns to not only improve [the] mom's health but also to improve the baby's Health."

Dr. Whitaker and her team have hypotheses to justify these differences in development. One relies on conclusions gathered from the Developmental Origins of Health and Disease theory, which assumes that early pregnancy, as opposed to late pregnancy, is when the structure and function of body organ systems is developed.

"If you're active early in pregnancy, that can potentially improve organ development in babies because it enhances the vasculature in the placenta early on." One of the organ systems enhanced is the musculoskeletal system, which gives children a head start as far as motor development is concerned. Higher levels of MVPA may increase placental vascularity during this crucial point in development, which could lead to nutritional differences between active and more sedentary mothers. This increased nutritional transport may optimize the development of organ systems,

including the musculoskeletal system, which contributes to gross and fine motor skills. Alternatively, Dr. Whitaker recognizes that differences in childhood development may be due to maternal habits after childbirth. "Women who are active in pregnancy are more active postpartum, and they are more active with their children." The physical activity undertaken by the mothers and children may contribute to improved motor development in children. Although both hypotheses have a solid foundation of evidence-based research, she believes further study is required to pinpoint the mechanisms for improving the development of fine motor skills and perception.

Dr. Whitaker hopes that her research can be used to advise new physical activity guidelines for mothers-to-be. In the past, pregnant women were advised to not exert themselves and get plenty of rest. Dr. Whitaker disagrees with this philosophy. "The idea that when you are pregnant you should sit down and put your feet up is counterintuitive, it actually seems as though it's healthier to maintain physical activity throughout pregnancy." Dr. Whitaker hopes her work will help lead to new sedentary behavior guidelines during pregnancy. Dr. Whitaker notes that there are activity guidelines for pregnant women, and they are nearly identical to the guidelines recommended to women who are not pregnant. And more importantly, she says, "there are no current United States guidelines regarding sedentary behavior for pregnant women." In the future, Dr. Whitaker plans to continue her quest of improving women's health, hoping to tackle problems such as infant and maternal mortality. "In the United States, it's actually embarrassing how bad our maternal mortality rates are compared to other developed countries, and that to me is just unacceptable."

Nick Schany is a third-year undergraduate studying biochemistry. He works as an EMT at Palo Alto County Health Systems and is interested in studying medicine in the future. He is from Emmetsburg, Iowa.



Meaghan O'Neill is a fourth-year undergrad from Chicago studying Human Physiology with a minor in Psychology. Outside of academics, she volunteers as the Marketing and Finances Executive for the UI Mobile Clinic. She works as a Nursing Assistant at UIHC, and is interested in Women's Health and Labor & Delivery.

Homeruns to Homeostasis

Recognizing Nate Jenkins, PhD.

Written by HHP Students

Raginya Handoo and Grace Foster



Many student athletes enter college with the dream of becoming a professional in their sport but soon realize that such a path is not right for them. Nathaniel Jenkins, PhD, found himself in this conflicted position when he was an undergraduate studying science. As a collegiate baseball player, he thought he wanted to stay involved with sports, but he knew that playing baseball professionally wasn't going to work out. He decided to pursue a career blending both of his passions. In 2011 he was graduated from Messiah College in Pennsylvania with a degree in Exercise Science. Although he originally planned to work as a strength and conditioning coach, he found his true passion in research. "In getting involved in undergraduate research I realized I really enjoyed the research process, and that ultimately led to me pursuing a PhD," says Dr. Jenkins, which he finally completed at the University of Nebraska in Exercise Physiology and Nutrition. Soon afterward he accepted a tenure-track position at the Oklahoma State University before moving to the University of Iowa in the summer of 2020. In addition to teaching as an assistant professor in the Department of Health and Human Physiology, Dr. Jenkins also has been researching how to promote healthy lifestyles in understudied populations. He is most interested in studying lifestyle medicine, which includes the health effects of exercise, nutrition, and chronic stress. His lab is involved in various exercise-related projects with two primary foci. The first is testing the efficacy of resistance training as an alternative or adjuvant to aerobic training for decreasing cardiometabolic risk. The second is to understand the effects of adverse childhood experiences (ACEs) on long-term cardiovascular health. In September, 2021, Dr. Jenkins's paper on this latter topic, "Childhood Psychosocial Stress is Linked with Impaired Vascular Endothelial Function, Lower SIRT1, and Oxidative Stress in Young Adulthood," was published in the *American Journal of Physiology Heart Circulatory Physiology*.

In this paper Dr. Jenkins and his team examine the impacts of ACEs on cardiometabolic health and the effects of exercise resistance training on vascular endothelial function (VEF), which is a measurement of these cells' ability to properly respond to changes in blood flow, along with many other physiological balances. Dr. Jenkins describes ACEs as "psychosocial stressors that occur during sensitive developmental windows." The scale of ACEs ranges from mild to severe, and previous evidence has shown that ACEs promote higher risks of cardiovascular disease. Increasingly severe exposure to ACEs leads to increasingly greater risks for cardiovascular disease, which is known as a dose-dependent response. His lab currently studies the mechanisms that cause this response. There are several behaviors that are thought to increase the risk of cardiometabolic disease, but even after adjusting for those behaviors his study still found an increased risk associated specifically with ACEs. He hopes to develop new interventional exercise strategies to counteract the effects of ACEs. Dr. Jenkins notes that exercise interventions can impact both biological and psychological markers, such as anxiety and depression, which are common comorbidities in individuals with ACEs.

“The changes in psychological markers in some cases are related to the changes in biological markers,” Jenkins says. “We don’t often think that the non-biological markers or stress would have such dramatic effect on the physiological markers, but very clearly there is an interplay between the two.” Dr. Jenkins and his team studied whether an 8-week exercise period would increase endothelial function in individuals with ACEs, thereby reducing their cardiovascular disease risk. To do so they measured the VEF of each subject and the circulation of the enzyme SIRT1, which removes acetyl groups from other proteins. This gives it an important role in biological systems including in endothelial cells, such as increasing nitric oxide synthesis and decreasing oxidative stress.

The study recruited more than twenty young women, some of whom had moderate to severe ACEs and others with no ACEs. Each was given a strict, eight-week exercise regimen to follow. The participants were divided into groups. Some were tasked with completing exercise training, and others were instructed to follow a habitual exercise routine. The group with the exercise training completed eight weeks of progressive resistance and interval training, consisting of four sessions weekly. Prior to beginning the regimen, they found that the women with ACEs had a decreased vascular endothelial function and reduced SIRT1 in circulation. After completing the study, they found that the eight-week exercise regimen did not cause significant improvements in either endothelial function or SIRT1 circulation in the women with ACEs as compared to those without. Dr. Jenkins says that this was a pilot study, with further studies still to come. According to Dr. Jenkins, this study demonstrates that even otherwise healthy young adults who have been exposed to ACEs demonstrate

impaired vascular function, which may be an important mechanism promoting higher lifetime cardiovascular disease risk in those with ACEs. Dr. Jenkins hopes that he has the opportunity to conduct additional studies to more carefully determine why vascular function is impaired, and to identify interventions that may help improve cardiovascular psychophysiological outcomes in those with a history of ACEs.

One of the most influential individuals in Dr. Jenkins’s life was his undergraduate academic advisor. As a freshman in college, school fell low on his list of priorities. He struggled during his first semester, but things changed drastically after reaching out to his advisor for help. His advisor saw Jenkins’ potential and pushed him to get more involved on campus, which ultimately brought him to research. According to Dr. Jenkins, “I loved the research process and enjoyed reading scientific literature... really because I’m kind of weird.” His experience in a research lab ultimately led him to graduate school. He credits his advisor for helping turn his academics around and to find his passion in life.

Since moving to Iowa City roughly a year and a half ago, Dr. Jenkins has found many things he enjoys about the area. Dr. Jenkins enjoys the people that he gets to call colleagues and work and collaborate with at Iowa each day. The numerous local trails and bike lanes have ignited a passion for biking, something he often enjoys doing with others. And because food and nutrition are two of his passions, he also enjoys the diversity of restaurants and foods. When he is not busy with work, he loves spending time with his wife and two-year-old daughter. In rare moments when he’s free, he enjoys woodworking and building. Dr. Jenkins is very excited about the future for his family as well as his research, and is happy to be a Hawkeye!

Raginya Handoo is currently a 3rd year student studying Human Physiology on the Pre-PA track. She currently works as a Nursing Assistant at the Pediatric Specialty Clinic in the Stead Family Children’s Hospital, and as a Student Research Assistant in the lab of Dr. Diana Jalal.



Grace Foster is a third year Human Physiology student planning to attend PA School. Grace currently works as a Nursing Assistant in the Pediatric Specialty Clinic at UIHC and is involved in undergraduate research in the lab of Dr. Gary Pierce. Grace is passionate about her volunteer work at the Emma Goldman Clinic.

Therapeutic Recreation Program

Adrienne Johnson, MA



Celebrated as Major Contributor to Special Olympics National Banner

Special Olympics presented the University of Iowa with a Special Olympics National Unified Champion School Banner on November 17, 2021, making the Hawkeyes one of the less than 6% of schools in the United States that can display this banner. The recognition comes after the University of Iowa met the 10 standards of excellence that focus on three areas of inclusion - Special Olympics Unified Sports® (where students with and without disabilities train and compete as teammates), inclusive youth leadership, and whole-school engagement. The University of Iowa is the first collegiate institution in Iowa and one of only 68 schools nationwide in 2021 to receive National Unified Champion Schools status.

The Therapeutic Recreation (TR) Program was recognized as a major advocate and partner by providing support in all three areas of campus inclusion. Professor Adrienne Johnson advises the Special Olympics Student Organization which promotes programmatic leadership, advocacy, awareness, and inclusion on campus throughout the school year. Specifically, the Special Olympics Student Organization participates in awareness and education activities that promote inclusion amongst the broader University population, such as the Spread the Word to End the Word (R-Word) Campaigns as well as Polar Plunges and other student fundraising to support local programming.

Additionally, the Recreation Leadership and Programming course within the TR Program hosts two whole-school engagement activities for Special Olympics athletes and community partners, a Unified Sports Day in the fall and an Inclusive Young Athletes Field Day in the spring.

Beyond this, the student organization and TR program collaborate with University of Iowa Recreation Services to offer other inclusive events throughout the year and have recently added a Unified Intramurals Liaison to support the University of Iowa Unified Intramurals Program.

The partnership between the Therapeutic Recreation Program and Special Olympics continues to grow and benefit students and social inclusion in our communities. The program is honored to be recognized as a champion of social inclusion in the United States.

Learn more at <https://clas.uiowa.edu/hhp/undergraduate/bs/therapeutic-recreation>



HHP GRADUATE PROGRAM

HHP offers the following graduate programs: MA in Sport and Recreation Management, MS in Health and Human Physiology with thesis, MS in Child Life, MS in Clinical Exercise Physiology and Ph.D. in Health and Human Physiology. Since 2010, our graduate program has also grown by 136% and now includes 92 graduate students.

SRM Summer 21 Graduates

Dylan John Connolly
Cassidy Elise O'Leary
Eavion Monique Richardson
Dane Harrison Vorbich

SRM Spring 21 Graduates

Nicholas John Baer
Seth Leo Balke
Samuel Riggins Basler
Steven Roger Carlson
Dylan John Connoll
Keith Duncan
Charles Parker Francis Jahn
Jasmine Nicole Mayes-Browning
Miranda Ann Miller
Jordan Michael Polk
Ryan Robert Ruckdaschel
Richard Alan Stockton
Elise Amy Van Heuvelen Treadwell
Tysen Lewis VanDraska
Lindsay Marie Welker

HHP Summer 21 Graduates

Kathryn Kay Ehram - Child Life
Joseph Daniel McDonell
Cydney Lyn Westen - Child Life

HHP Spring 21 Graduates

Daniel Marie Beechy - Child Life
Elana Lynn Breitenbucher - Child Life
Will Robert Daniels - CEP
Justin Deters
Jaclyn Dziewior
Gillian Leigh Fiandaca - Child Life
Mariah Lynn Guerrero - CEP
Madeline Elizabeth Lawrence
Bailey Elizabeth Lewis - CEP
Jack Michael Miller - CEP
Kayla Nugent - CEP
Minsuk Oh - PhD
Ethan Pottebaum
Abbey Elizabeth Schaefer - Child Life
Violetta Shatalova
Sydney Gabrielle Stigge - Child Life

Visit: clas.uiowa.edu/hhp/graduate

HIGHLIGHTS

Dr. Gayle Walter earned her MCHES certification

·Dr. Gayle Walter recently had two abstracts accepted for presentation at the 2022 annual meeting for the Society of Public Health Education (SOPHE). A poster will be presented on Critical Race Theory, Segregated Housing, and Sleep Health. An oral presentation will be on The Impact of an Undergraduate Cultural Competency Course on Students' Level of Knowledge and Awareness.



Health Studies Student Abigail Weaver shares her experiences at HHP

My name is Abigail Weaver, and I am in my final semester at the University of Iowa getting my B.A. in Health and Human Physiology on the Health Studies track. After graduating, I plan on applying to many medical sales and pharmaceutical sales jobs in the Chicago area. Being in the HHP department introduced me to some of the most amazing professors and people I have come to know. They are all so welcoming and have a true passion for what they are teaching. In my final semester, I was looking to get involved in something and could not find anything, so I went to my professors for their advice and help. My professor, Dr. Gayle Walter, connected me with one of the most amazing research groups that has taught me more than I ever could have predicted. I work under Dr. Strathearn's lab in the Center for Disabilities and Development, and he and the rest of the lab have been so welcoming. Even though I am



only able to be there for a few months, I have learned more in the few months there than I have in any experience I have had. I have even started to consider applying for research positions after I graduate. I wish I would have started a research position sooner, and I encourage everybody to do it for at least one semester. The University of Iowa's HHP department has many great courses and opportunities to offer, and I am lucky to have been involved in it the past 3.5 years.

Learn more about the BA in HHP - Health Studies | Department of Health and Human Physiology | College of Liberal Arts & Sciences | The University of Iowa (uiowa.edu)

AWARDS

Bri Swope honored with the CLAS Outstanding Outreach and Public Engagement Award



Bri Swope was recognized on behalf of CLAS as a recipient of the 2021 CLAS Outstanding Outreach and Public Engagement Award.

This award honors a CLAS faculty member who has engaged in activities that bring the University to broader communities in significant and sustained ways. In her letter of nomination, Kristina Gordon writes that outreach and public engagement has been an integral part of your work throughout your career at the University of Iowa. “Not only has she been instrumental in creating significant and sustainable service-learning opportunities for students to connect with the greater community, Professor Swope has developed and embedded experiential learning and community service activities into the foundations of her coursework.” She writes that your thoughtful effort to engage your students with the greater community gives them practical experience serving others in the field, including your partnership with Courage League Sports, the UI Reach program, your recent role as a Certified Inclusivity Assessor through at SUNY Cortland, and your offering of study abroad courses and field trips with various student organizations.

Congratulations on Fellowship Awards for Jenkins, Bates, and Whitaker

Dr. Nathaniel Jenkins was awarded Fellowship through Council on Lifestyle and Cardiometabolic Health in the American Heart Association

Dr. Melissa Bates was awarded Fellowship in the American Physiology Society (FAPS)

Dr. Kara Whitaker was awarded Fellowship through Council on Epidemiology and Prevention in the American Heart Association (FAHA) and Fellow of the American College of Sports Medicine (FACSM)

Fellowship reflects the highest professional stature by a professional organization - it recognizes 'elite' member status and is reserved to honor distinguished leaders in an organization who have demonstrated excellence in scientific and professional achievement, and who have made significant contributions in volunteer leadership and service to the organization and the field.



COMING UP NEXT SEMESTER



Ms. Judy Heumann campus visit!

Tuesday, March 29, 2022: Join HHP with a showing of Crip Camp at Film Scene following by a Q&A, reception, and book signing with Ms. Judy Heumann

Wednesday, March 30, 2022: With ADA Celebrations and The Harkin Institute, Ms. Judy Heumann will be speaking at Hancher Auditorium

As an international disability and civil rights activist as well as 'the activist star' in the Academy Award Nominated Documentary, Crip Camp, Ms. Heumann has made significant contributions through her advocacy to help advance disability rights.

HHP is excited to welcome back David Geslak! HHP Alumni and Leader in Autism and Exercise

Friday, March 4, 2022: Join Autism and Exercise: Education and Action for the Educator and Practitioner

Saturday, March 5, 2022: Autism Exercise Specialist Workshop at the Field House.

Learn more at AutismExerciseSpecialist.com



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Physiology