

SIUE's Fernandez del Valle Committed to Optimizing Women's Health

February 27 2020 11:27 AM



EDWARDSVILLE – Which mode of exercise most effectively reduces cardiac fat in women? How can different modes of exercise improve cardiac function? These are among the questions Southern Illinois University Edwardsville's Maria Fernandez del Valle, PhD, is asking through her research aimed at optimizing women's health.

Fernandez del Valle is an assistant professor of exercise physiology in the School of Education, Health and Human Behavior's Department of Applied Health. She is a prime example of a teacher-scholar who has established effective multi-disciplinary collaborations and consistently involves undergraduate and graduate students in the Exercise Physiology Lab to pursue high impact research.

"My research focuses on improving exercise prescription through different lines of study to help individuals optimize their health," Fernandez del Valle explained. "Currently, we're targeting women, and conducting research on cardiac fat and function to determine how different modes of exercise can help us improve both."

Unsatisfied with a meta-analysis that concluded exercise didn't have a significant effect as a strategy to reduce cardiac fat, Fernandez del Valle is investigating further for the benefit of

women's health.

"I want to improve the way we prescribe exercise," she said. "We need a larger sample size to clearly see data trends, but early indications show that we can have a high impact on cardiac fat around the heart with resistance training alone. The implication then would be that obese women should do resistance training to target more internal fat rather than the fat you see on the outside. Because, internal fat is what I linked to the development of metabolic and cardiac diseases."

Two of Fernandez del Valle's primary collaborators are Jon Klingensmith, PhD, assistant professor in the SIUE School of Engineering's Department of Electrical and Computer Engineering, and Pamela Woodard, PhD, with the Washington University School of Medicine.

"Upon meeting Dr. Fernandez del Valle when we both arrived at SIUE, I was excited to learn of her expertise in obesity and her research in how to reduce the fat around our internal organs," Klingensmith said. "Our interdisciplinary collaboration has opened new avenues of study at SIUE, including the use of cardiac MRI to quantify and map cardiac fat, and the development of ultrasound-based algorithms for identification of cardiac fat. These efforts would not be possible for either of us alone. The interdisciplinary nature of the work allows us to pursue ideas and funding that otherwise wouldn't be available."

Fernandez del Valle is also an active research mentor for multiple undergraduate and graduate students, most of whom have earned competitive research awards and Undergraduate Research and Creative Activities (URCA) accolades.

"We can teach in the classroom and explain concepts, but when students are in a lab, I can see their faces and how it just clicks that 'oh, now that's what this means' and 'this is connecting with this,'" Fernandez del Valle said. "Without my collaborators' and students' assistance, this work would not be possible. It involves human subjects, assessment training and implementation, data reporting and much more."

"Working in Dr. Fernandez del Valle's lab has helped me connect with people," said graduate student and research assistant JaiLin Allen. "Working with her has helped me gain not only experience in exercise physiology and knowing how the body works, but also how to tie in that experience with personal interactions and my future career."

"Before working in this lab, I wasn't sure what I wanted to do post-graduation," added graduate student and research assistant Paige Davis. "Now, I know I want to work in a research lab at a college or government agency. I love the mix of human interaction and data entry, and how everything comes together to achieve interesting results."

The SIUE School of Education, Health and Human Behavior prepares students in a wide range of fields including community and public health, exercise science, nutrition, instructional technology, psychology, speech-language pathology and audiology, educational administration, and teaching. Faculty members engage in leading-edge research, which enhances teaching and enriches the educational experience. The School supports the community through on-campus clinics, outreach to children and families, and a focused commitment to enhancing individual lives across the region.

Video: <https://www.youtube.com/watch?v=wJaHjF5sl98&feature=youtu.be>

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