

## Honors Capstone Critique

My capstone project on the “Effect of Pregnancy on the Arch Mechanics of the Foot” adds to the field of biomechanical research by giving a baseline of studying pregnancy in all three trimesters, rather than just looking at the first. A literature review indicates that previous studies focus mainly on the arch mechanics in the first trimester, even though most physical changes in the body happen in the second and third trimesters. Some strengths of my project are the equipment used (PWALK system) to gather data, along with the weight vest provided to mimic weight gain throughout pregnancy. I did, however, have some limitations to my study including a low number of participants and the fact that my participants were not physiologically pregnant.

My results show a dramatic increase in midfoot force from walking with no excess weight to walking with an additional 28 pounds in the third trimester simulation. The flattening of the arch was not seen as much throughout the three trimester simulations, which originally was expected of the results. With these results not being as dramatic in change as expected, I started gathering data on the distribution of force in the foot and found the midfoot absorbed the most force when walking, which was expected of the results. Overall, I believe that my study was both a success and a failure in the sense that some of my results were expected to be seen, and some were not.

I am hoping that my research is able to be a stepping stone for further research in the field to find ways to prevent and/or treat foot, knee, hip, and low back pain during pregnancy. I am very grateful for this opportunity to participate in research on campus with relation to my major and future career path of allied health sciences and physical therapy, respectively.