Elyse Frazier

Su20-022

Ferguson, MO

Junior
Health Science (Health and Wellness Services)

Faculty Mentor: Dr. Victoria Vieira-Potter, Nutrition and Exercise Physiology

Funding Source: MARC/IMSD - NIH-funded Maximizing Access to Research Careers/ Initiative for Maximizing Student Diversity

Adipose Tissue-Specific effects of dopamine receptor 1-specific Esr1 deletion in mice

Elyse Frazier, Rebecca Welly, Dusti Shay,and Vicki Vieira-Potter

Estrogen loss may have many effects on women especially during menopause. During menopause women may go through a series of issues including increased weight, hot flashes, disrupted sleep, and increased irritability. Estrogen loss is known to have noticeable effects on weight in women. This is because when estrogen decreases so does the activity rate in female mice. Lower amount of activity will inevitably end in some type of weight gain if diet is the same. Using the mice model, we can make some hypothesis about what is expected to happen in women as well. If mice have lower activity with estrogen loss it is possible that the same happens in women as well. Especially during menopause when estrogen levels tend to drop rapidly. This could create some problems for a women's metabolic health after menopause. When a person has high activity levels it puts them in a position to having an overall healthy life as parts of their body are in their best shape. However, having low estrogen levels can interfere with all these things just by altering activity level. Our goal is to see if the deletion of estrogen receptor 1 (esr1) in dopamine specific brain regions have any effect on adipose tissue. To start this project, we plan on doing cell sizing analysis and UCP1 quantification on brown adipose tissue (BAT) histology samples from the knock out and wild type groups using Image J. As well as look at the gene expression of Ucp1 in BAT using qPcr and wester blot. I cell sized 19 animal ID's BAT. Fir each ID I had 100 cells that were measured for analysis. Each stained image for every ID was measured for Ucp1.