

Jewel Malonza

Graduation Year: Sophomore

College: Science

Major(s): Biology

Minors(s): Anthropology

Scholar Group Membership: No

Did you received other funding for this project?: No

Could you have completed this project without CUSE funding? No

More details on CUSE funding assistance?

Project Title: Correlation of X-ray Maximum Body Width Measurements and QMR Fat Mass Measurements

Project Location: University of Notre Dame, Notre Dame, IN, Leevy Lab

ND Faculty Mentor: Matthew Leevy

Project Type: Research

Why did you undertake this project/experience? Deepen your knowledge of a topic or issue, Internationalize your Notre Dame experience

Did your funded experience help you:

[Deepen your understanding of your coursework or field of study]: Yes

[Discern your interests and post-bac goals]: Very Much

[Become confident in your ability to set and achieve your goals]: Yes

[Gain a more nuanced view of local, national, or global communities]: Very Much

[Improve your written and verbal communications skills]:Very Much

Tell us about your experience.

This summer, I was awarded the opportunity to work as a lab assistant in an on-campus imaging lab run by Professor Matthew Leevy. Armed with a grant and a purpose, I committed to ten weeks of research in a field that I was a complete stranger in. With no previous background or knowledge regarding radiology, I was assigned to an ongoing project that was concerned with the utilization of dual energy x-ray to analyze body fat composition within mice, something that was yet to be done by any other lab. As with most tasks, I started off with beaming optimism, entering each day ready to learn more about adequate animal handling and the proper imaging methods. Having been motivated by the possibility of providing the science community with groundbreaking information on how to execute preclinical imaging in obesity studies, I faced every day with unwavering excitement. As I progressed through the summer and the data piled up, it became obvious that the project that had been assigned to me was not providing any substantial information. I had to redefine my goals and methods, thus changing the ultimate purpose of the research, what might have been the most frustrating part of it all. Having worked so hard to not produce and insightful results was disenchanting. However, we continued to seek correlations and several Excel graphs later, it became obvious that the dual energy X-ray was not the most ideal imaging and searched in other places. Referring back to the

correlations presented by the data, heaviest lay between the maximum body width measurement and the QMR fat mass measurements that had been gathered, meaning that as the body fat composition of the mice increased, so did the numbers presented by the QMR machine, especially amongst the female mice, information that also had been unknown to us and was therefore groundbreaking to me.

Describe the impact this project had, both on you as a student-scholar and on the people you worked with.

This project instilled in me a sense of cooperation, diligence, and persistence, all qualities that I found to be extremely useful and important as I conducted my research. Having to work with other individuals and be vulnerable enough to admit mistakes when necessary was essential in fostering an appropriate work environment and an environment where successful research was to occur. I would like to think the relationships formed with my coworkers were rooted in the mutual love of science and thus are to be very professionally flourishing.

Describe how this experience is connected to your plans as a student or future professional.

In regards to my career aspirations and future plans, as an individual who has always had a difficult time making a decision or picking a favorite, it would riddle me to narrow down exactly what I am interested in, in regards to research. I am still floundering in what exact path I would like to take, and with being a Biology major, the options are endless as medical school and graduate skills both appeal heavily to me. Having just completed my freshman year, I personally conclude that it's too early in my life to definitively declare my interests in science, given its eclectic and diverse nature. However, to narrow it down as asked, I place heavy interest in the anthropology of science and medicine, and have actively pursued this by declaring a major in Biology and a minor in Anthropology, to attain as much knowledge on the two separate subjects and where the lines overlap. Reiterating that I have always been a firm believer in the exploration of all topics until the perfect match comes along, this summer was a great manifestation of that. I acquired several skills while working in Leevy Lab and although my future may not take me down the radiology road, I am eternally grateful for the experience the grant permitted me to have.

What advice would you give other students who are planning to pursue similar projects?

Reiterating on the impact this project had, I firmly believe that perseverance and patience are essential in any research environment and that anyone planning on engaging in research exude those qualities. Those two virtues go a long way when dealing with a subject as stubborn as science, in that the answers will present themselves only after strenuous work and application. In addition to this, I find it imperative to be able to be vulnerable to critique and insight, along with open minded in ones knowledge and that of others.
