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Biological Science Aid
Southern Insect Management Research Unit

What is your science? My name is Cavishia Andrena' Roberson. I am a biological science aid at United States Department of Agriculture where I work for the Southern Insect Management Research Unit. I have worked for SIMRU for three years now. My first two years, I worked for Dr. Omaththage Perera where I studied the genetic makeup of tarnish plant bugs and other field pests. This summer, I have the pleasure of working with Dr. Randall Luttrell, Kenya Dixon, and Chad Roberts.

I am currently majoring in nursing at Delta State University and plan to become a pediatric nurse and then later a pediatrician. Therefore, everything I do in biology will help me in my future endeavors. I have learned several things and conducted several experiments while working with the Southern Insect Management Research Unit. This summer particularly has been a totally different procedure. For instance, I was accustomed to working in the molecular biology lab, but this year I also became familiar with the field studies and why their science is also important. Dr. Luttrell's experiments emphasize the management of field pests in cotton, corn, soybean and sweet potato. This summer I learned how to plant different varieties of cotton by hand and also evaluate the resistance that they have on the insects. Also, I learned how to map cotton, by doing this, you look at the bolls and the squares to determine if they are bearing fruit or have been damaged by field pests.

Scouting for tarnish plant bug has been a major project for Dr. Luttrell's research. As a result of scouting for tarnish plant bug, we also discovered the names of other

insects in the process. We would go to different farmer fields around the delta region and map cotton and then sweep for tarnish plant bug. The data we collected from this experiment will later be evaluated so that Dr. Luttrell can analyze the patterns and cycles in which the tarnish plant bugs fed off the cotton.

A major experiment I worked with often was dissecting *Helicoverpa zea*. The head and thorax will be removed as well as the abdomen and wings. The head and thorax will undergo a process called DNA Purification (Dr.OP). During this process, we will use an optimized protocol to determine the genetic makeup of the moth, as well as the population migration. After the DNA is complete, a PCR experiment is performed to amplify the target genes of interest within the sample. The wings of the insects will then be rolled and performed with carbon to determine which host plant the insects fed on using the c3:c4 ratio(Dr. Jackson). This entire experiment is important because it will enable us to identify the genetic make-up, migration patterns, and host plants of the life cycle of the *Helicoverpa zea*.

I read an article on “Population Dynamics and Gene Flow of the *Helicoverpa armigera* on Cotton and Grain Crops in the Murrumbidgee Valley, Australia.” in this article, they performed a similar experiment, the only difference was the moth species.

In conclusion, I learned many things that have impacted my way of analyzing science and also the importance of the experiments that I performed.