This summer began my third consecutive summer for the USDA-ARS at Stoneville, but this was my first for SIMRU, or Southern Insect Management Research Unit. SIMRU helps, "improve the safety and efficiency of pest control for cotton, maize, soybean, sweet potato, and other row crops." (www.ars.usda.gov/main/site). Through my experience here I have aided in conducting experiments, collecting samples, doing administrative work, and also lending a helping hand when and wherever I was needed.

Dr. Randy Luttrell, the Research Leader for this unit, is my supervisor. Dr. Luttrell plays a huge role in things working smoothly and correctly around here. Daily, he deals with agricultural problems that insect pests create on field crops such as corn, cotton, soybeans, and sweet potatoes. Without him, I would not have instructions as to what should be done, nor how it should be done.

Working in the office with Mrs. Cathy Warren, Sakinah Parker, and Yolanda Harvey has helped expand my knowledge of computer programs. These ladies are very helpful and willing to answer any questions I have even when they are extremely busy. Yolanda is always willing to fix any computer problems that come up in order for me to continue my work. Administrative work is important because without it people could not be hired and information could not be processed. This experience has helped me gain knowledge of just how much actually goes into their job. I thought working in the office would be fairly easy, but I have learned that trying to balance all of the work assigned is not as easy as it appears. I now have a new appreciation for these ladies and for the hard work they put into each task they must complete. My biggest office project was scanning files in order to create a database with scientific journals and papers. I scanned about 320 files this summer. I also worked with Microsoft programs such as Excel, Access, PowerPoint, and Word.

This summer I was also given the opportunity to work in two labs. I worked in Dr. Luttrell's lab along with Kenya Dixon, Andrea McNeal, and Cavishia Roberson. Here I learned about *Lygus lineolaris,* also known as tarnished plant bugs. I was able to go to the cages and learn about plant sampling and sweeping. I also learned how to look for eggs on plant samples of com, cotton, and soybeans. These girls have shown me how to work hard in order to get the job done in a timely manner. The second lab I worked in was Dr. Zhu's. I worked beside Sandy est, Barbara Putnam, and Becky Worsham. I learned a lot from this experience, and I gained owledge of farms around the area as I swept for tarnished plant bugs with Dr. Zhu. I also

learned how important it is to collect an abundance of bugs in order to have enough for research. Barbara and Becky were great resources explaining duties to me and answering questions when I did not understand, or when I was simply curious.

Overall this has been a wonderful experience and I am so blessed to have had the opportunity to work with each person. The environment is great and the people are so cheerful. I really like that. This has been a learning experience and I can take the knowledge I have gained to school with me. Not only did I learn skills to better complete each task I was given, but I learned patience, flexibility, and time management. These will help me in my everyday life.

Dr. Luttrell asked that I read a scientific journal article. The one I was given was called, "Spatial and Temporal Distribution of Heliothines and Tarnished Plant Bugs across the Landscape of an Arkansas Farm." It was written by Dr. Allen and Dr. Luttrell. After looking at the title I was a little worried about reading and writing about the paper because the title itself was not clear to me. Needless to say, I was educated with new vocabulary. *Heliothines* are what a group of bollworms and tobacco budworms are called. The word *spatial* means there is space and *temporal* means time. By reading this paper I learned many things. The first thing I learned was the scientific names of three bugs. *Heliothis virescens* is the name for the tobacco budworm, *Helicoverpa zea* is also known as a bollworm, and lastly I learned that *Lygus lineolaris* is the name of tarnished plant bugs. All three of these feed on many different kinds of crops making them *polyphagous.* The studies conducted in this paper took place in Desha Co., AR on the Pickens farm. The purpose of this study was to examine the fields and determine whether or not Bt crops have an influence on pest population density and use of insecticides on cotton.

Many methods and materials were used to complete this study. Materials used started with the farm records from 2001-2005. These records included material such as: the crop grown on the field in a certain year, insecticide applications to the cotton fields, and insect scouting records. After obtaining this information a map was made. This map helped put borders and perimeters on the field. A farm map and planting records were also used as a material during this study. From looking at the materials it was established that Bt and non-Bt crops were grown on the Pickens farm in 2003-2005. A Bt crop is a genetically altered crop with toxins in it, while a non-Bt crop does not have these toxins. In order to determine the spatial distribution of the crop the cotton field was sampled twice a week in June-August by an agricultural consultant. 100 plants were randomly selected and used to describe the insect density. The relationship of

heliothine eggs and tarnished plant bugs, as well as the percentage of the type of crops grown in the field was examined. In order to determine the temporal distribution of the local crop the fields in which cotton was grown from 2001-2005 was examined. The Friedman two-way analysis of variance by ranks was used to determine if the distribution of heliothines and tarnished plant bugs were random or not.

Results showed a positive relationship between the area in corn and the number of heliothine eggs in cotton in June of 2004 and 2005. Positive relationships were also found between the numbers of tarnished plant bugs in cotton and the surrounding area planted to corn. Negative relationships were found between the numbers of tarnished plant bugs in cotton and the surrounding area planted to cotton. There was more of a population in cotton fields with an earlier date of flower rather than those with a later date. Overall I learned that this data meant the tarnished plant bugs populated areas in cotton surrounded by corn versus areas in cotton surrounded by cotton, or cotton surrounded by other crops. This article related to the work I did with Dr. Zhu sweeping for tarnished plant bugs. It showed the best fields to look for the bug, and also when there would be an abundance of them.

This has been a great experience and I am thankful to have been a part of this unit. I really enjoyed the work I was given as well as the variety of it. I hope to take something I learned here and share it with someone in my future.