

**ENS Elizabeth Isley
JRCOSTEP Summer 2019
Western Carolina University
Whiteriver Service Unit
Whiteriver, Arizona**



My name is Elizabeth Isley, and I am from Rocky Mount, North Carolina. I will be a senior this fall [2019] at Western Carolina University, where I am majoring in Environmental Health. For my JRCOSTEP, I was lucky enough to get assigned to the White Mountain Apache Tribe in Whiteriver, AZ. I also had the opportunity to work on the San Carlos and Hopi Reservations learning about temporary food vendors, doing surveys, and mosquito trapping. My preceptor was Mr. Daniel Dicks, who had a wealth of information and was happy to share his knowledge with me. Additionally, I was able to go into the field with several other Environmental Health Officers, including CDR Sarah Snyder, LT Andrea Tsatoke, LT George Chung, Mrs. Sherry Chase, and Ms. Rachel Stokes.

My summer externship was a great way to use the knowledge I have acquired from my classes and to have the opportunity to apply it to the real world. I was able to participate in a variety of activities such as: conduct dog bites investigations to rule out exposure to rabies; assist in community campaigns to prevent Rocky Mountain spotted fever; and teach food handler class at multiple locations. I also assisted with surveys of several facility types (e.g., schools, childcare centers, restaurant, and pools), conducted seat belt observations to determine community usage rates, and completed complaint investigations.



I traveled to Hopi and San Carlos, where I learned to set out mosquito traps. We put them up in different areas around the reservations and collected them the following morning. I was able to test the mosquitoes for the West Nile virus, using field test equipment called RAMP. While there, I learned how to sort the mosquitoes based on species while looking at them under a microscope. This activity was very interesting as I had never looked at mosquitoes so closely before. I had the opportunity to vibrate and centrifuge the mosquitoes causing the mosquitoes to break apart. The pieces of the mosquito sink to the bottom and the liquid from the insect stays on the top. The liquid was then taken and transferred to a corresponding tube and placed on the West Nile test strip. We then had to wait 90 minutes for the cartridge to develop before placing it into the RAMP reader machine which provided an antigen level. Thankfully none of them were over 10.0 meaning the samples were negative. I thought this externship would be mainly observing activities all summer, but I was mistaken. It has given me ample opportunity to use my knowledge hands-on more than I ever expected.

Rocky Mountain spotted fever (RMSF) is a tick-borne disease that affects both Apache reservations. During the summer, I had the chance to work with the RMSF Prevention Program by applying pesticide to homes and distributing tick collars to keep the ticks at bay. This summer was the first time the communities have started to track for pesticide resistance. They identify dogs as a type A, B, or C dogs, which is determined by the number of ticks observed. An “A” dog has zero ticks, a “B” dog has 1-20 ticks, and a “C” dog has greater than 20 ticks. If the homeowner has seen ticks, and this was verified during the campaign with a C-dog in close proximity, then follow-up trapping was conducted three weeks after the application of a pesticide to determine the effectiveness of the application. Traps were set using a white fabric sheet, plastic paper cover, with petroleum jelly lining the edges to cause the ticks to stick. An insulated container with dry-ice was placed in the center of the white sheet. The holes in the bottom allowed the Carbon dioxide to seep out, creating the illusion of a person exhaling to attract the ticks.

The individual project I worked on this summer addressed fire safety with temporary food vendors. This project was to assess the current fire safety evaluation practices on the White Mountain Apache, Hopi, and San Carlos Apache Reservations. The reason I choose this project was because of a fire that occurred at a powwow I was working at. The powwow was held in a remote pine forest and all the vendors were crowded close together in tents. Fold-up tables, grills and fryers were set-up under the tents. One vendor was working out of a rectangular, wooden trailer that caught fire as a result of a propane leak. People were injured from the fire. I interviewed Environmental Health staff to determine fire safety assessments they made as part of food vendor surveys. After the interviews, I analyzed the current temporary food establishment survey form to see what items were evaluated. The checklist only had one fire safety precaution. I researched additional precautions to assess regarding grills, propane tanks, and fire extinguishers. Lastly, I developed PowerPoint slides to add to the Food Handler Class to help educate the community on the dangers that are present while operating a temporary food vendor truck or tent and how to help prevent a fire from happening.

I am very thankful to have been given the opportunity to come to Whiteriver, AZ this summer and learn more than I ever thought. I am grateful to all the people I have met and the wonderful things they taught me through the summer. I am excited to return to school for my last year and apply the things I have learned and experienced. I feel this JRCOSTEP assignment has increased my knowledge and will benefit me as I continue in my environmental health career.