For my honors thesis I participated in the 29th annual Waste-management Education Research Consortium in Las Cruces, New Mexico. My team's task was the removal of dissolved phosphorus from runoff water and the production of a usable fertilizer. We competed against five different teams from universities across the nation and placed second in our task category.

My role on my team was team coordinator and my duties included assigning tasks to team members, managing a team of six students, checking work for accuracy and completion, being in charge of two team meetings per week that included faculty advisors, and keeping faculty advisors updated on progress. As well as my duties as team coordinator, I also contributed most of the mathematical calculations used in our project.

My team and I started this project in the second week of January and had until the beginning of April to finish it completely. The first couple weeks were spent reviewing articles of past works and evaluating what we could do differently to make this process profitable and easy to use. We decided that a packed bed column full of adsorbent material was the most promising option. To design the column, we needed information about different adsorbent materials and information about the inlet stream of water. I helped run batch experiments to decide which adsorbent material would be best for our use. I also did several calculations to find an accurate flowrate for an average sized farm of 65 gallons per minute into our column system. With the flowrate and adsorbent potential of our material, I calculated the size of column needed to remove phosphorus from water for a month- this was our full-scale system. After this I was in charge of calculating the application rates that would be in accordance with the Clean Water Act based on our fertilizer's chemical components. At the competition my team and I presented our information in the form of PowerPoint, poster, and bench scale demonstration of our system.

Throughout this project I gained so much more than an honors thesis and the knowledge I acquired about phosphate removal. I learned to work alongside my peers in a successful team. I also learned to consult faculty when needed, and we could not have completed our project without their help. I also had the opportunity to collaborate with people from the Biosolids Management Site, Wastewater Treatment Plant, Beaver Water District, and the University of Arkansas Swine Finisher Farm in Fayetteville, Arkansas.