During the spring semester of 2014, a team in the Chemical Engineering department at the University of Arkansas, named H2OGS, was assembled to compete in a design competition held at New Mexico State University. The task given to this team was to develop a sustainable brine concentrator powered by solar energy for use in communities with little to no fresh water resources.

I was assigned to this team as the Research Coordinator. I performed several duties throughout the project’s lifespan, beginning with scope development and information gathering. During the beginning stages, all members of the team reported to me the information they had and the possible direction they thought the project should proceed. I gathered that information and reported it to our sponsor, Dr. Roy Penney, and the team leader; afterwards we would discuss which design to pursue.

Lab testing was performed by myself and another team member in order to determine at which point salts would drop out of solution in various brine samples. Construction of the lab scale unit was done by said team member and actual brine testing was performed by myself. This lab unit was then scaled up to make the basis for the team’s larger, production unit that would be taken to the design competition. Construction of this larger unit was performed by myself and Dr. Penney.

After the large scale apparatus was constructed and tested, organized deconstruction and packing of the apparatus could begin; the deconstruction was “organized” because the whole process needed to be performed in reverse once the team arrived at the competition. This deconstruction was performed by four team members including myself. Once the apparatus was driven to New Mexico State University by myself and another member, it was then reassembled.

I also performed in both PowerPoint and poster presentation to a committee of judges as well as perform safety checks of apparatus throughout the competition.