



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Anthony J. Becerra	Project Number J0901
Project Title Recreating a Geyser Story	
Abstract Objectives/Goals My objective was to recreate a geological geyser and determine whether the depth of the geyser's vent would have an affect on the frequency and duration of the geyser's eruption. My hypothesis was if the vent was shorter then the geyser would erupt more frequently with shorter duration. I decided to investigate this after visiting Yellowstone National Park watching Old Faithful erupt. The park personnel were able to predict approximate schedules of eruption time throughout the day. Methods/Materials In order to recreate the geyser I used different lengths of 5mm glass tubing, ErlenMeyer Flask,Scientific ring stand, a plastic pitcher, plumbers putty and electric buffet plate as a heating source, stopwatch, water and food coloring. After connecting the tubing to both the flask and pitcher. I filled the flask and pitcher with cool water, started the heat source and timed the eruption cycles using 1 foot, 2 foot and 3 foot lengths of glass tubing to represent varied depths of the vent. I placed food coloring in the plastic pitcher (above) to show how the water at the earth's surface is drawn back into the vent to reset the eruption cycle. I recorded the number eruption cycles, start and end time of eruptions, duration of each and time between each eruption. Results My experiment showed that the longer the tube the greater number of eruptions occurred and the duration and time between each was consistent. The shorter the length of tubing resulted in fewer eruptions which were inconsistent in duration of time. In fact, the 3 foot tubing resulted in a maximum of 11 eruptions that were approximately 43 seconds long and occurred approximately every 3 minutes. Conclusions/Discussion My hypothesis was incorrect. After recording all the data I found that the deeper the vent the more consistent the the duration of eruption were, and I was able to predict approximately when the next eruption would take place. This experiment helped me understand how eruption cycles are able to be predicted at geysers such as Old Faithful in Yellowstone National Park and others around the world. This knowledge enables visitors at such places to consistently guarantee that they will witness such a fabulous geological event.	
Summary Statement I found that the greater depth of a geyser's vent enabled me to predict duration of and time between eruptions.	
Help Received Mrs Bernstein, my science teacher for reviewing my project and my Father, Steve Becerra for acting as safety officer during the project. In addition, the Synopsys Outreach Foundation for providing the posterboard for our sceince fair.	