



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Emilio S. Chavez</b>	<b>Project Number</b> <b>J1206</b>
<b>Project Title</b> <b>Does Blue Lakes Have Safe Levels of E. coli?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this experiment was to see if dangerous levels of E. coli are currently in Blue Lakes, a lake that is located in Lake County, California.</p> <p><b>Methods/Materials</b> Materials: Colilert Reagent, autoclave, incubator, comparator, 100 ml sterile bottles, Quanti-trays, Quanti-tray sealer, 6 watt UV light (Alpha Labs tools used) -GPS application (iphone), iPhone camera, electric boat (rental). Lake water samples were collected and tested from five different areas with three trials at each location. Each 100 mL water sample was evaluated for Total Coliform and E. coli using Colilert Reagent.</p> <p><b>Results</b> The five sample sites, with three trials gave varying results for Total Coliform and E. coli. The samples taken by the Le Trianon Resort (A1, A2, A3) gave the highest values of E. coli. While the samples taken from Blue Lakes that had no resort or homes in close proximity (C1, C2, C3) gave the highest Total Coliform counts.</p> <p><b>Conclusions/Discussion</b> The results of my experiment showed that the highest levels of E. coli were from the samples that were taken by the Le Trianon Resort. The highest Total Coliform results were from samples taken at the southwest side of Blue Lakes. The Total Coliform levels were much higher than the levels by the Le Trianon Resort, so there may be other types of bacteria at the southwest side of Blue Lakes that need tested. The high amount of E. coli by the Le Trianon Resort site was not a surprise due to its high amount of tourists and how close some of their buildings are to the shore. I did not find dangerous levels of E. coli.</p>	
<b>Summary Statement</b> I tested water samples from Blue Lakes for E. Coli and Total Coliform in order to show that there is a low health risk for E. Coli to the general public when using the lake for recreation.	
<b>Help Received</b> Alpha Labs allowed me to use their lab space. Zee Hopper-Alpha Labs told me how to run the tests, then I did them for my own experiment, she answered questions about testing. My mother took pictures/wrote my gps coordinates down while I sampled water. My grandmother drove the boat.	