



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Kimy Alexi Buere	Project Number J1005
Project Title Creating Potable Water and Electricity for Undeveloped Countries	
<div><div>Objectives/Goals My objective is to create a device that purify unsafe water and while generating electricity.</div><div>Methods/Materials Get the 4x18 inch PVC ½ inch and connect it to the PVC 3 way cup-links. Connect all the 4x8 inch PVC ½ inch to the 3 way cup-links creating a box. Before Filling the silicone tubing, attach one end with the 2 ½ reduced ½ cup-links. Now you can fill the filter with your filtrating materials; carbon, sand and Now attach the second 2 ½ reduced ½ cup-links on top to complete the filtration system. Secure Filter tubing to structure with the 2 ½ inch hose clamps. Attach hose to shut off valve and connect to the bottom of the filtration tubing. Gather a 5 gallon bucket and drill a ½ hole towards the bottom of the bucket Affix drain hose to the bottom of the bucket. Screw in the hose from the bottom of the bucket to the top of the filtration system. Drill ½ inch hole on back side of 2 ½ reducer and affix hose reducer. Cut 10 inch piece of hose, attach to hose reducer then to the top port of your O2 side of your Fuel cell. Building your Water/Gas tank module. Get (2) 1 inch PVC T reduced to ½ inch and attached by 4 inch by ½ inch PVC pipe. Cut two 14 inch tubing. Attached the two pieces of hose to either side. (O2 and H2) Connect the O2 tubing to the O2 side of the power cell Connect the H2 tubing to the H2 side of the power cell. Plug in your solar panel to fuel cell</div><div>Results .The data collected in Experiment indicated that... Decomposition of glycerol could be efficiently performed through photocatalysis; Around 90% of the glycerol in each solution was removed after two hours; The hypothesis was supported. The data accuracy could be improved by measuring Chemical/Biochemical Oxygen Demand. However, the data collected could still clearly examine the ability of photocatalysis to remove organic pollutants. In Experiment, the results showed that The addition of organic reductants could greatly enhance the yield of photocatalytic hydrogen generation.</div></div>	
Summary Statement I created a device that could purify unsafe water and at the same time generates electricity for homes in undeveloped countries	
Help Received I would like to express my gratitude to the following people: - My family for their endearing support and their assistance provided in the construction of the device. My brother Zachary Benetatos for supervising me while conducting experiments	