



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Ky A. Duong</b>	<b>Project Number</b> <b>J0204</b>
<b>Project Title</b> <b>Microbial Fuel Cells: The Power of Mud!</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this study is to determine which kind of mud sample will produce the greatest amount of voltage from using a microbial fuel cell. <b>Methods/Materials</b> Three pairs of containers, three various mud samples, saltwater solutions, salt bridges, electrodes, air pumps, alligator clips, resistors. Tested each of the three mud samples with a multi meter and air pump over 20 days twice a day. <b>Results</b> The fuel cells were tested twice a day and the amount of voltage produced from each was compared. I found that the fuel cell containing lake mud was the most efficient in producing voltage with an average of about 12 mV in comparison to the canal and river mud with averages of 0.3 and 3 mV. <b>Conclusions/Discussion</b> The microbial fuel cell that contained the lake mud was much more efficient in generating voltage than the canal and river fuel cells. This, all in all, shows that mud can be used as an alternative energy source in harnessing electricity, in which lake mud is the most effective in doing so.	
<b>Summary Statement</b> I discovered that lake mud is able to produce more voltage in a microbial fuel cell than the canal and river mud, and mud microbial fuel cells can be used as an alternative energy source.	
<b>Help Received</b> My parents helped me build the device and collect mud and water samples. I designed the fuel cell after researching different designs and did the rest of the experiment by myself. My science teacher helped me determine whether my project was restricted and helped me understand what was going on in my fuel	