



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Isabela S. Sugden	Project Number J0220
Project Title The Bright Side of Bacteria	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective was to find and test an alternative source of electricity from an unlikely source</p> <p>Methods/Materials - 2 mud samples - 2 pieces of thin felt - 2 pieces of thick felt - 2 microbial fuel cells - 2 gloves</p> <p>Results The bacteria in both microbial fuel cells produced measurable electricity. The plant mud was able to produce a significantly greater amount of microwatts than the creek mud.</p> <p>Conclusions/Discussion I learned that it is possible to make alternative forms of electricity, ultimately proving that my hypothesis was correct. Electricity can be produced from bacteria growing/reproducing in an anaerobic environment, like a microbial fuel cell. Overall this experiment went very well. Ultimately it made me realize that, although generating electricity from a bacterial source is possible, probability is low due to any usable quantity of energy would require large fuel cell farms. This would probably also require enormous changes to our current infrastructure, but may be useful to how we might use something as unpleasant as bacteria to our benefit for future colonizations..ie. in Mars for example where the likelihood of an anaerobic environment might be high. So although it is a cleaner alternative to burning fossil fuels it is also a more labor intensive way to produce electricity.</p>	
Summary Statement My project is about creating alternative forms of electricity, I did this by growing bacteria in an anaerobic environment (microbial fuel cell).	
Help Received My mom helped me by driving me to the creek and by taking pictures of me while I was doing the experiment. My dad helped me edit my final conclusion and analysis for grammatical errors.	