



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> Georgie S. Mathews	<b>Project Number</b>  31537
<b>Project Title</b> Oil Clean Up Crew	
<b>Objectives/Goals</b> My objective was to find out if the bacteria <i>Vibrio fischeri</i> could efficiently degrade oil. I hypothesized that <i>Vibrio fischeri</i> would efficiently degrade oil. <b>Abstract</b> <b>Methods/Materials</b> To conduct this experiment I used sodium chloride, yeast extract, peptone, distilled water, an autoclave, sterile test tubes, a micropipette, sterile micropipette tips, sterile swabs, agar plates, <i>Vibrio fischeri</i> , <i>Pseudomonas fluorescens</i> , a digital scale, an incubator, motor oil, and sterile syringes. I tested the <i>Vibrio fischeri</i> for efficient oil degradation by comparing it's growth to another bacteria's. This bacteria was called <i>Pseudomonas fluorescens</i> and is commonly added to oil spills to degrade oil. I then grew each bacteria in two broths, one with and one without oil. After incubating the bacteria, I performed a serial dilution and plated each group on an agar plate and incubated them. I then recorded the growth of bacteria in CFU/mL. <b>Results</b> <i>Vibrio fischeri</i> grew an average of only 55,000 CFU/mL compared to <i>Pseudomonas fluorescens</i> which grew an average of 825,000 CFU/mL. <b>Conclusions/Discussion</b> My results proved my hypothesis wrong and I discovered that <i>Vibrio fischeri</i> did not degrade oil as much as <i>Pseudomonas fluorescens</i> according to this experiment. I think <i>Vibrio fischeri</i> would be a great bacteria for degrading oil in the deep ocean if it were genetically engineered to consume oil.	
<b>Summary Statement</b> I tested if the bacteria <i>Vibrio fischeri</i> could efficiently degrade oil.	
<b>Help Received</b> Mother helped handle bacteria; Dr. Orwin helped advise me on my procedure;	