



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Cody A. Peterson	Project Number S1719
Project Title Are Plants Producing Methane?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals There are currently three scientific studies in contention over whether or not plants are producing the potent greenhouse gas methane; this experiment aims to find a possible explanation for the methane dilemma. It is my belief that if wooded plants are producing methane, then it may be coming from bacteria living in and around the bark eating the accumulated dead cells.</p> <p>Methods/Materials Using 19 sterile cotton swabs, 19 clear labels, 19 sterile petri dishes, 1 digital camera, and 1 liter of Tryptic Soy Agar, I swabbed 5 trees 3 times each at the same height and location, prepared petri dishes and let them cool, then I smeared the dishes with the swabs, labeled and sealed the dishes, photographing them daily for five days and then took the data and made it into something tangible.</p> <p>Results It was found that the standard and three other samples had an extremely high growth rate. The control remained pristine and the two samples with the least growth release an antibacterial which leads to the implication that the growth on the other three are in fact bacterial. This data was found by calculating the area of the bacterial growth and dividing it by the total area of the dish in order to find the total percent of growth.</p> <p>Conclusions/Discussion I have concluded that there are in fact bacteria decomposing the bark and they are a likely source of the methane production due to the concentrations of growth I found in my data.</p>	
Summary Statement My experiment was designed to test whether or not there are methanogens living on the bark of live trees releasing methane through decomposition of the accumulated dead cells which make up a plants bark.	
Help Received Used lab equipment at Chapman University under the supervision of Professor Frank Frisch	