



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jacqueline M. Havens</b>	<b>Project Number</b> <b>S1313</b>
<b>Project Title</b> <b>Microbial Population Dynamics During Composting</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> To observe the change in bacteria species in a compost heap exposed to genetically engineered corn over a period of time.</p> <p><b>Methods/Materials</b> I extracted DNA from a compost heap and amplified the 16S rRNA gene for actinomycetes and bacteria. After a series of gel electrophoresis experiments, DNA purifications, amplifications with the PCR machine, and picking bacterial colonies, I sequenced ten samples of bacteria from two different time periods. The sequences were logged into the computer and the NCBI was able to identify the different species.</p> <p><b>Results</b> Out of ten colonies being sequenced, each colony was a different species, showing incredible species diversity in this compost heap.</p> <p><b>Conclusions/Discussion</b> I identified species of bacteria in a compost heap at different time periods. The species were not identical, but to see if they really evolved (my next year's science project), I am going to test for ampicillin resistance. If bacteria can evolve like this in the presence of genetically engineered corn, there is a chance that plants may develop pesticides resistance.</p>	
<b>Summary Statement</b> I am identifying species of bacteria at different points in time in a compost heap exposed to genetically engineered DNA.	
<b>Help Received</b> Used lab equipment at UCI under the supervision of Dr. David Gardiner	