



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>Audrey E. Landale</b>	<b>Project Number</b>  22535
<b>Project Title</b> <b>The Effect of Lead in Gasoline on the Environment Near Major Roadways</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My objective was to find out if any bacteria in the soil near roadways had developed resistance to lead. I hypothesized that the farther away from the road my samples were, the less lead resistant bacteria they would have. <b>Methods/Materials</b> To see if bacteria had developed lead resistance I tested the top 0-5cm of soil at 0.5, 5, 10, 20, and 50m away from a major road. Then I made agar plates with nutrient agar with and without lead nitrate, and diluted the soil samples with sterile deionized water. Then I plated different amounts of different dilutions onto the plates with and without lead, let the bacterial colonies grow, and counted them. <b>Results</b> Overall I found that there was a high percentage of lead resistant bacteria closest to the road, then the percent decreased, but at 20 and 50m, percentages rose again. <b>Conclusions/Discussion</b> My results partially supported my hypothesis, but I was able to find out that bacteria did grow lead resistance, which was my objective. As far as I know, I am the first person to test for lead resistant bacteria near roadways.	
<b>Summary Statement</b> My project was to test soil samples near roadways for lead resistant bacteria.	
<b>Help Received</b> I used the materials and research facilities of the Harvery Mudd College Biology Department; Nancy V. Hamlett advised me on procedures.	