



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Clarice B. Arcia	Project Number S1502
Project Title Air Pollution: What We Should Wear	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to find out how well do the clothes we wear protect us from the pollutants in the air by testing commonly worn fabrics in compleatly diffrent locations,with Petri dishes to see the bacteria and the pollutants that were absorbed by the fabric.</p> <p>Methods/Materials Useing 4 diffrent fabrics, 100% cotton, 100% ployester, mixed 12% nylon 88% polyester, thick 100% cotton denim, I cut five 10cm squares out of each fabric makeing twenty squares. I then disenfected each square with bleach then placed into a high heat dryer untill compleatly dry. After, I got five tightly sealed plastic bags, placeing 1 of each fabric in the bags makeing 5 sets.I then numbered the bags, sets 1-5. Aftert I got twenty petri dishes and twenty rubber bands. i grabbed each set and placed the fabric on top of the dish and tightly rapped the rubber band around the it,and placed the sets back in their tightly sealed plastic bags. Set #1, was made my control group to ensure a fair test, by leaveing them in their bags in dark light. Set #2 was placed in my home. Set#3 was placed outside of my house in a small neighborhood. Set #4 was placed in my garage. And set #5, was placed on the corner of a busy street. Each set was left in there location for 24 hours. After they were incubated for 48 hours. After the incubation I was able to see all the bacteria that had went each through fabric.</p> <p>Results Denim showed to be the most protective with the least amount of bacteria. Next was the polyester, then came the mixed fabric and lastly can the cotton with the most bacteria.</p> <p>Conclusions/Discussion Denim turned out to be the most protective, my theroy is because of the density of the material and how tightly the fibers are weaved together. Next came polyester. Then was the mixed and lastly and certainly the worst was cotton. my theroy for the cotton is because of how loosely the fibers were woven, making the fabric able to strech un like the denim, so the bacterias can go straight through the material. but all in all clothes protect us from pollutants no matter what, with out clothes are skin would be bare and we wouldnt have a barrier to prevent the pollutants from comeing directly onto are skin, increasing are chances of getting sick, astama, cancer and or death. so when it comes to being smart in what you where in areas that are exposed to a lot of pollutants, you may want to where denim.</p>	
Summary Statement How well do the clothes we where on a day to day basis protect us from pollutants and bacteria in the air.	
Help Received Used lab eqptment from reedly collage under supervision of Dr. Elizando;	