



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Katrina Maria C. Steinhauer</b>	<b>Project Number</b> <b>S1917</b>
<b>Project Title</b> <b>Does Mutation in Drosophila melanogaster Affect Their Attraction to Different Odors?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project was to determine if genetic mutation affects attraction to different odors in Drosophila melanogaster, the fruit fly. I believe that the behavior of the mutant fruit fly is different due to its genetic mutation.</p> <p><b>Methods/Materials</b> Three different mutated fruit fly populations were tested: the "sepia", having a mutation on chromosome 3 for eye color; the "white eye", having a mutation on chromosome 1 for eye color; and the "ebony", having a mutation on chromosome 2 affecting body color. A "wild type" population was compared as a "control". To avoid confusion, 16 different odors were tested as three categories: Fermented liquids; fruits; and condiments. The odors were obtained by rubbing the surfaces of each item with Q-tips and placed in slits in the covers of containers having fifty flies each. It was necessary to anesthetize the flies before placing them into each container, and then wait until they each awoke before counting the number of times that flies landed on each of the Q-tips. The landings were counted for fifteen minutes and then recorded.</p> <p><b>Results</b> The number of "landings" recorded in the mutants were lower than the number of "landings" recorded in the "control wild-type" group. I compared the mutant populations to the "wild type control" using statistical methods.</p> <p><b>Conclusions/Discussion</b> The mutant populations were less attracted to all of the odors tested as compared to the "wild type control" population. This suggests that each of the mutations tested affected behavior, or possibly that because of "mutation linkage", feeding behavior was affected.</p>	
<b>Summary Statement</b> I compared three mutations in the fruit fly to the wild type fruit fly to determine if mutation in fruit flies affects their attraction to different odors.	
<b>Help Received</b> Mr. Nathan Whittington, High School science teacher provided fruit flies. Mrs. Charlebois, AP statistics teacher, provided advise on statistical analysis. Mr. Carl Gong advised me on my idea for my project.	