



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> Sarah E. Rice	<b>Project Number</b> <b>S1115</b>
<b>Project Title</b> <b>Does Noise Physically Stress Mus musculus, the House Mouse?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Everyday, we experience various levels of stress, good and bad. Being exposed to continuous stressors can show up in various physical or mental behaviors. My goal was to determine if exposed to constant noise will cause rapid weight loss, loss of appetite and aggression. In order to answer these questions, I decided to conduct my scientific experiment using Mus musculus (mice). <b>Methods/Materials</b> Separate 24 mice into four groups: 4 female and 4 male for the control groups and 8 female and 8 male for the test groups. The control groups will only bare the ambient noise and be placed in separate fish tanks. The exposed groups will be subjected to between 55 and 80 decibels (dB) of noise using the metronome for 1 hour, each day, but no more than 90 dB of sound to ensure their humane treatment. Place each group in a wire cage. Since the mental state of the mice can not be determined, observe their physical behaviors. This will include the amount of exercise, along with the amount of food eaten. Weigh each mice everyday, for 10 days, to ascertain any other physical changes. <b>Results</b> The exposed male group became aggressive. The female ambient group had an 8.6% weight loss; the female exposed group had a 2.2% weight gain and no sign of aggression. The male ambient group had a 16.0% weight gain, and the exposed male group had a 6.9% weight gain with no sign of aggression. <b>Conclusions/Discussion</b> After my testing, the exposed male mice did become aggressive, but they did not drastically lose weight. As I predicted, the exposed female mice did lose weight from days 5 through 8, but ended up gaining weight by the end of the experiment. The female ambient group also lost weight.  Various factors may have caused my data to be inaccurate due to preexisting conditions of the mice and my scale may not have been precise.	
<b>Summary Statement</b> This project was conducted to determine if constant noise will stress the Mus musculus by observing their physical behavior and change in weight.	
<b>Help Received</b> My mother showed me how to use the Excel program and transported me to buy the necessary supplies. Mrs. Fusco allowed me to borrow her sound level meter. Dr. Chevront approved and certified my experiment. Lastly, Mrs. Cox, my biology teacher, helped me figure out my project idea.	