



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>Zhi-Ren K. Liang</b>	<b>Project Number</b> <b>S1007</b>
<b>Project Title</b> <b>Let the Music Begin!</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of my project was to determine the effects of playing music after a vigorous exercise on the human body's heart rate and blood pressure. My goal is to establish which genre of music will have the most influence on the rate of decrease of blood pressure and heart rate. <b>Methods/Materials</b> I gathered willing volunteers from various age groups, and took their blood pressure and heart rate before any exercise. The subjects then were requested to do 40 jumping jacks in order to raise their heart rate and blood pressure. The subjects were then seated and rested for five minutes while listening to a certain type of music. This procedure was repeated six times, each time with different music. I recorded the difference between the initial blood pressure and heart rate and the resulting blood pressure and heart rate to see the affect of music on each type of music. <b>Results</b> Rock music tended to influence the rate of decrease of blood pressure and heart rate the most. Although not beneficial, the rock music tended to keep the blood pressure and heart rate at a higher level for a longer period of time. On the other hand, though not as influential, helped to lower the heart rate the quickest. <b>Conclusions/Discussion</b> Contrary to my hypothesis, the data leaned toward rock music as being the most influential in rate of decrease of heart rate and blood pressure. With the varied results of each type of music, the data suggests that sound therapy is indeed medically beneficial.	
<b>Summary Statement</b> My project investigates the effects of various music types on human heart rate and blood pressure.	
<b>Help Received</b> Mr. Easton (Honors Math Analysis teacher) helped with the mathematical analysis aspects of my project; Dr. Rajasingham, M.D. (specialist in pediatric cardiology) helped to understand the various factors influencing blood pressure; Mr. Levy (AP Biology teacher) main mentor with various degrees in science,	