



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jacob D. Elliott</b>	<b>Project Number</b> <b>J1610</b>
<b>Project Title</b> <b>Do Drumline Drummers Risk Hearing Damage?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> I propose that if members of a drumline practice in an enclosed area without ear protection, then individual drumline members are put at a high risk of hearing damage.</p> <p><b>Methods/Materials</b> Materials: decibel meter, measuring tape, drumline (trained drummers playing specified drumline instruments.) Methods: assemble drumline in standard formation inside an enclosed room. Observe and record multiple testings of the "average" and "maximum" decibel levels while drumline is playing. Repeat these observations with various decibel meter placement.</p> <p><b>Results</b> The results of this experiment indicate that the decibel levels experienced during drumline practice are an average of 102 decibels with a maximum level of 107 decibels.</p> <p><b>Conclusions/Discussion</b> Given the amount of practice time, and the measured decibel levels, the levels of sound intensity are well above safety recommendations of the National Institute on Deafness and Communication Disorders, and the National Institute for Occupational Safety and Health. Ear protection is necessary to reduce the risk of hearing damage. All members of the La Colina Drumline are now wearing daily ear protection.</p>	
<b>Summary Statement</b> Drumline drummers may be at significant risk of hearing damage if they wear no ear protection.	
<b>Help Received</b> Mother helped type report.	