



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Herbert Roger C. Vega</b>	<b>Project Number</b> <b>J1822</b>
<b>Project Title</b> <b>Extinguishing Fire Using Sound</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project is to see if it is possible to extinguish a controlled fire using sound. <b>Methods/Materials</b> Use a subwoofer or a speaker that has a strong bass and a usb cord. Plug the speaker or subwoofer into the computer or laptop and put it at the highest volume. Load a 60 hertz sound file (Youtube is an option). Light a butane lighter. Aim the speaker at the lighter. Record if the lighter goes out or not and how long it takes using the timer. Repeat steps above but by increasing the number of hertz in increments of 10.  Laptop; Usb Subwoofer; Timer; Butane Lighter; Sound Files. <b>Results</b> I tested the subwoofer from 50 hertz to 100 hertz, and recorded the times. At 50 hertz the subwoofer was most effective at putting out the flame, but the intervals between each test in time were small. During all tests the lighter went out. <b>Conclusions/Discussion</b> My results support my hypothesis that the flame would be extinguished. This project can be used in a case of an emergency and it would not leave dangerous chemicals behind like other types of fire extinguishers. In the future if I were to do this again I would build a fire extinguisher that uses a subwoofer, and put it in a larger scale.	
<b>Summary Statement</b> This project is about extinguishing fire using low frequency sound waves.	
<b>Help Received</b> None; I researched for, designed, and performed this project on my own.	