



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Faith J. Bray	Project Number J1003
Project Title Testing Tesla: Creating Amplified Sound without a Traditional Speaker and Wireless Energy	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project was to find out if I could create amplified sound without a traditional speaker. This led to wireless energy.</p> <p>Methods/Materials Plasma Speaker, CD player, and light bulb. Built Plasma Speaker using a Solid State Tesla Coil, and used it to play amplified sound. It also caused a light bulb to light up without wires.</p> <p>Results I took a Solid State Tesla Coil and made a plasma speaker. I used 75 feet of magnet wire and had to tune it by cutting the wire down and testing how much arc was being produced. The amount of arc is dependent on the length of overall wire. Tuning the resonator was very difficult and caused many MOSFET failures. When I got everything in tune, and turned on the CD player. I could hear music coming from the arc on the Resonator. It also caused a lightbulb to light up without wires.</p> <p>Conclusions/Discussion My conclusions were what I expected. I could make amplified sound without a traditional speaker. What I didn't expect was the difficulty in repeating the results. It took a lot of trial and error to repeat my results. Many MOSFETs failed and fuses blown. It was very hard to tune the resonator. I am still learning and have more to learn especially in the area of wireless energy.</p>	
Summary Statement I showed amplified sound could be made without using a traditional speaker.	
Help Received I built the plasma speaker with help from my dad, Troy Bray. I had help understanding how the resonator worked from Hoyt Yeatman.	