



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

Name(s) Katie A. Shevlin	Project Number J0326
Project Title 3D Printed Automatic Solar Powered Dog Food Dispenser	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to create a dog food dispenser that was solar powered, automatic, and 3D printed.</p> <p>Methods/Materials I used a Solar Panel Battery Pack, Servo motor, 3D Printer, and an Arduino Uno. To make my project I had to write a program, design a 3D model of the dog food dispenser, print the components, collect data on how much dog food got dispensed with different variables, and put everything together.</p> <p>Results The results of my data was mostly surprising. One of the things that surprised me was the results I got from changing the amount of time the food had to dispense out. Another surprising element of my data was the effect of the size of the dispensing hole had on the amount of dog food. Overall, most of the data I collected surprised me.</p> <p>Conclusions/Discussion With my project I had several issues, but it was mostly good. One problem was that I had to make the original size of my dog feeder smaller because the printing pad at Wagic wasn't big enough for the size I wanted. Another problem was that the solar panel I planned on using didn't give out enough voltage for the arduino uno and servo motor to work so I had to buy another solar panel which didn't get mailed in time to have it at the science fair. Also I had to reprogram the arduino uno so that it made the servo motor turn three times to give out food. Last but not least, I had to increase the size of the dispensing hole with a dremel so enough food could come out. Also I didn't give myself enough time to create a app that connects to your phone. In conclusion, I had several problems while I was doing my science fair project. There could be many improvements in the future and there is one flaw in the method that I would change. Starting off, I would double the size of the dog feeder so that I wouldn't have to change the model manually. I could make the arduino programed so that it ran at certain times instead of every twelve hours after it has been turned on. Another improvement would be that I would add a lid for the bottom of the dog feeder because the arduino uno and servo motor is exposed to the ground and could get ruined by water. The last improvement I would do is make the feeding bowl deeper so there is enough room for the food to be dispensed into.</p>	
Summary Statement My project is about how I designed, programmed, and 3D printed an automatic solar powered dog food dispenser.	
Help Received Makers Factory helped tutor me with 3D designing and programming; Wagic helped 3D print	