



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Sarah G. Gonsalves</b>	<b>Project Number</b> <b>J0309</b>
<b>Project Title</b> <b>Rac Attack</b>	
<b>Abstract</b> <b>Objectives/Goals</b> I am tired of the raccoons coming into my yard at night to go through the trash and/or dig up the lawn. Most of all, I am concerned for my dog's safety. What can I invent to keep raccoons out of my backyard without hurting them? <b>Methods/Materials</b> I know that raccoons are nocturnal so I needed to invent a device that would detect the raccoons' motion at night. I also know that a motion sensor light alone would not be enough to scare them away, however adding a spray of water might. I needed to figure out how to invent a device that would combine some type of motion sensor with a water source. My materials consisted of 1 light and motion sensor unit, 1 irrigation control valve, 1 low voltage transformer, 1 irrigation sprinkler, 5 PVC fittings, 1X12 piece of wood, drill, screws, clamps, saw, black paint, hose adaptor, 2 plugs and a timer. My method/procedure is as follows: 1. Cut wood, made base and painted base black. 2. Measured then drilled holes in the wood base. 3. Installed motion sensor with light. 4. Installed low voltage control valve. 5. Installed low voltage transformer. 6. Installed PVC fittings. 7. Installed irrigation sprinkler. 8. Installed hose connection. 9. Connected wires from motion sensor to transformer. 10. Connected wires from transformer to control valve. 11. Hooked up water source. 12. Connected to electrical source. 13. Tested invention. 14. Activated RAC ATTACK <b>Results</b> I placed RAC ATTACK in my backyard for a period of 23 days. Prior to that, I recorded raccoon activity over the course of three months by observing torn up garbage and/or lawn. For the month of October, I recorded a total of 18 times, in November, 12 times and in December 15 times. From January 1-23rd with RAC ATTACK in place, I found no evidence of raccoon activity. <b>Conclusions/Discussion</b> My invention worked because after RAC ATTACK was in place, there was no evidence of raccoons digging up the lawn or going through the trash.	
<b>Summary Statement</b> My project is about keeping the raccoons out of my yard without hurting them in order to protect my dog and property.	
<b>Help Received</b> Father helped with the construction of the invention. Mother helped by taking me shopping to pick out materials for board.	