



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Sakshi Kumar; Nithila Poongovan	Project Number J0315
Project Title Poop Patrol: Simplifying the Interaction between the Visually Impaired and Their Service Dogs	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project is to build a device that makes it easier for the visually impaired service dog owners to know when their guide dog is excreting waste.</p> <p>Methods/Materials Tested different magnetic proximity sensors and magnets of different strengths to find best combination with largest range. Bought remote doorbell to connect to the sensor. Bought knee braces for the guide dog. Attached device on the knee braces. Tested the device by having guide dog sit in the squatting position where one front leg and one back leg come close. If the doorbell rang, then device would be successful.</p> <p>Results Out of three trials, the door bell rang two out of the three times, making the device successful. The door bell did not ring the first time because the sensor was positioned a little off (human error).</p> <p>Conclusions/Discussion Overall, the device was successful, and user-friendly. The guide dog seemed to have no irritation on skin. The device was comfortable. The visually impaired seemed comfortable with the device too.</p>	
Summary Statement I engineered a successful device that detects when a guide dog's front leg and hind leg are very close, setting off an alarm and letting the visually impaired know when their dog is excreting waste.	
Help Received My team coach helped my team with the component selections of the device.	