



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

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<b>Project Title</b> Parasite Contamination of Soil from Community Gardens and Playgrounds Associated with Free-roaming Cats	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of our research was to evaluate the public health threat of seven free-roaming cat colonies located in the greater San Francisco Bay Area. This goal was achieved by measuring the abundance of free-roaming cats near playgrounds and community gardens within the area and assessing whether or not the soil is contaminated with <i>T. gondii</i> using lab techniques.</p> <p><b>Methods/Materials</b> We collected soil samples from each site and used a sugar flotation technique to recover any potential oocysts present and the samples were posteriorly processed for DNA extraction. We also collected data on colony size, number of feeding stations, and number of latrines to examine if these factors could be associated with presence and distribution of <i>T. gondii</i>. Samples were analyzed using Polymerase Chain Reaction (PCR) and Gel Electrophoresis to determine presence of <i>T. gondii</i>.</p> <p>There were various materials necessary including numerous reagents and buffers for the lab procedures. A large and small centrifuge was also necessary. All of the necessary solutions to conduct the research were acquired through a mentor at UCSC Santa Cruz.</p> <p><b>Results</b> Our testing revealed no positive samples of <i>T. gondii</i>. Because our results were inconclusive and we did not find any <i>T. gondii</i>, we can not make any connections to prevalence factors and our hypothesis can not be confirmed or rejected.</p> <p><b>Conclusions/Discussion</b> Our testing revealed no positive samples of <i>T. gondii</i>. Because our results were inconclusive and we did not find any <i>T. gondii</i>, we can not make any connections to prevalence factors. These results, however, show that there is a low risk factor for becoming infected near the sites we collected samples from. Because this parasite can cause deformities in babies if the mothers become infected with the parasite during pregnancy, this shows that the community gardens and parks involved in this study are relatively safe for pregnant women and children.</p>	
<b>Summary Statement</b> I evaluated the public health threat of free-roaming cats in regard to the parasite <i>Toxoplasma Gondii</i> and found that the areas of study were relatively safe of the parasite.	
<b>Help Received</b> All of the research was performed at UCSC under the guidance of Luz de Wit who helped advise throughout the process.	