



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Sarah A. Baxter	Project Number J1501
Project Title Effect of Nearby Trash Cans on Apis mellifera Bacteria Counts	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objectives of this experiments were to determine if the bacteria count found on bees corresponds with the number of trash cans in the area that the bees are found in. By finding these results, a possible explanation for where the bacteria that causes cellulitis could be resolved.</p> <p>Methods/Materials The materials included a butterfly net, clear plastic cups, paper plates, MILLIPORE swab kits and MILLIPORE culture kits. First twenty-four bees were captured at each site, two different times. Then the bees were help in the plastic cups for twenty minutes each, using the paper plates as covers to keep them from flying away. After the twenty minutes, the bees were released and the cups were swabbed with the MILLIPORE swab kits. Then the swabs were shaken in culture solution for thirty seconds and later the paddles from the MILLIPORE culture kits were soaked in the solution for thirty swconds. Immediately after, the solution was discarded and the paddles were incubated for three days at 35 degrees Celcius. When it was done, the bacteria colonies were counted and averages were calculated.</p> <p>Results The average bacteria count from the area with the most trash cans turned out to be 6.21 colonies, the average from the area with the decent amount of trash turned out to be 4.75 colonies, and the one with no trash cans was 1.79 colonies. However, because of the lack of time allowed and the small numbers that came out with the averages, an ANOVA analysis was performed to verify that the data was distinctly differnt.</p> <p>Conclusions/Discussion The bees are likely picking up bacteria in trash cans or areas with a lot of human waste. It is common to get cellulitis and it is also common to find bees in trash because of the sweet scents that can emanate from it. Bees like the sweet scent, for example the scent of nectar. All the time they spend in the trash, they are bound to pick up bacteria, and most likely not all of the bacteria is safe. When people are stung and get cellulitis, it is because their skin is reacting with harmful bacteria, and the source of this bacteria is unknown for now. However, a likely answer to where the source is could be in trash cans.</p>	
Summary Statement The project is about finding the possible source of bacteria on bees that causes the skin disease cellulitis.	
Help Received Father helped catch bees.	