



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

<b>Name(s)</b> <b>Alessandro Villalvazo</b>	<b>Project Number</b> <b>J2316</b>
<b>Project Title</b> <b>Ant's Behavior without Antennae</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of my project was to see how ants with no antennae or with only one antenna acted in a test of finding food. I also wanted to observe their natural behavior and hoped to find common behavioral traits between groups.</p> <p><b>Methods/Materials</b> I tested their behavior and performance seeking ant food on a 1m long testing platform designed to resemble their natural environment that I created. I then observed the ant for five minutes per ant or until they reached the food. Their food sensing performance was measured by how long it took them to cross the 20cm, 40cm, 60cm, 80cm, and 1 meter mark toward the food source. For behavior, I observed for any behavior patterns in the groups to compare those tendencies with other groups.</p> <p><b>Results</b> The results were that the control group had all ten ants cross 20cm, six ants cross 40cm, three ants cross 60cm, two ants cross 80cm, and two ants cross 1m. The group missing the right antennae had nine ants cross 20cm, three ants cross 40cm, two ants cross 60cm, one ant cross 80cm, and one ant cross 1m. The missing left antenna group had nine ants cross 20cm, seven ants cross 40cm, and two ants cross 60cm. The group missing both antennae only had six ants cross the 20cm line. The strongest behavioral trait I found was from the missing both antennae group, that trait was aggression</p> <p><b>Conclusions/Discussion</b> I found evidence that ants not only use their antennae to sense food, but also that two antennae used together provide an advantage in making progress in the direction of the food source. There were a couple of things in which my research and data/results matched up.</p>	
<b>Summary Statement</b> In this project I tested <i>Pogonomyrmex occidentalis</i> and their ability to find food when missing their right, left or both antennae, and also see any behavioral traits between each group.	
<b>Help Received</b> I did the whole experiment myself, the only assistance I received was from my science teacher to find good sources for my research.	