



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Jasmine J. Gray	Project Number S0309
Project Title Antibubbles: An Easy Effective Way to Make a More Stable Antibubble	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective was to find an easier, more effective way to form a stable antibubble.</p> <p>Methods/Materials Room temperature carbonated water, distilled water, beer, and corn oil were placed in separate containers with clear dish soap. Two instruments were used, a plastic pipette and syringe, separately in all liquids for 60 seconds each to form antibubbles using the "Water Globule Method" (Beaty 1997). The number of antibubbles made by each instrument was counted and used to concluded the most effective instrument to use to form antibubbles. In another test carbonated water, distilled water, and beer were heated and cooled to determined the effects temperature would have on antibubble life span. Dish soap was added to all liquids after heating and cooling. In heated liquids the "Water Globule Method" to form antibubbles was not used, instead the "Titled Method" was used. Only the syringe was used during all testing. The last two experiments involved adding two different substances to room temperature distilled water to prolong antibubble life span. These substances were food coloring and a chemical called propylene glycol. Dish soap was added to the solution and the syringe was used to form antibubbles using the "Water Globule Method".</p> <p>Results Compared to the plastic pipette which made 32 antibubbles total, the syringe made 263 antibubbles. The longest antibubble life spans were in cold distilled water which made antibubbles lasting 64% longer the antibubbles made in room temperature distilled water and 81% longer than antibubbles made in hot distilled water. Distilled water with food coloring produced antibubbles lasting 76% longer then uncolored distilled water at room temperate. Distilled water with propylene glycol lasted 84% longer then distilled water at room temperate without propylene glycol.</p> <p>Conclusions/Discussion My results have lead me to conclude that the using the syringe in cold distilled water, with added propylene glycol would be an easier, more effective way to form an antibubble. Although, this antibubble is significantly stabler compared to a "normal" antibubble, it is still not completely stable. My results also suggest several oppourtunities for further study, including adding other hygroscopic chemicals like propylene glycol to expand antibubble lives even further.</p>	
Summary Statement This project explores how different liquids, evironments, and equipment effect the stablilty of an antibubble.	
Help Received Parents bought supplies; Local stores provided some free equipment .	