



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Erin V. Satterthwaite</b>	<b>Project Number</b> <b>S1917</b>
<b>Project Title</b> <b>How Does Water Temperature Affect What Settles on Subtidal Surfaces?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective is to determine how ocean water temperature affects the species composition and quantity of larvae that settle on different substratum. <b>Methods/Materials</b> Three different substrates (approx. the same size): shale, concrete, PVC, were put into three aquaria with thermometers and a raw sea water flow at the Marine Science Institute, UCSB. To test each substrate, the substrate was put into a plastic bucket, rinsed off with filtered sea water, and brushed with a toothbrush. A pipette was used to draw up the detritus with organisms in it, the sample was put into a fingerbowl, and a dissecting microscope was used to observe the sample. The type and number of larvae were recorded, and the procedure was repeated each week for the concrete, shale, and PVC. <b>Results</b> Overall, the organisms seemed to settle in great concentrations when the water temperature was at the median point. The two most abundant organisms were copepods and polychaetes. The copepod trend showed that as the number of copepods increased, the water temperature was at a middle range. The polychaetes trend was very similar to the copepods, in that when the water temperature was at a middle temperature, the polychaete number was at its peak. <b>Conclusions/Discussion</b> After analyzing my results I concluded that temperature did play an important role in the settlement of organisms on different substrates. The concrete and shale had similar relationships between organism settlement to temperature, but the PVC was much different. This shows that PVC is not a very effective artificial reef, due to the fact that it is not able to mimic natural substrates. This data could be used in artificial reef projects, to see what organisms could be expected to settle on varied substrates at different times during the year.	
<b>Summary Statement</b> My project tests how the water temperature of the ocean affects the organisms that settle on different subtidal surfaces	
<b>Help Received</b> Used lab equipment at Marine Science Institute, UCSB; Patricia Sadeghian and Paul Valentich- Scott helped with initial set up	