



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Abigail Z.E. Bairrington</b>	<b>Project Number</b> <b>J1502</b>
<b>Project Title</b> <b>Fighting for Phytoplankton</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My project was to simulate the effects of Global Warming with increased temperature and carbon dioxide enriched environmental variables, and to document the survival of the marine phytoplankton Nannochloropsis in those treatments compared to a control. <b>Methods/Materials</b> Three species of marine phytoplankton were obtained from the HSU Marine Lab. Three treatments were set up: increased temperature only, carbon dioxide enriched only, increased temperature and carbon dioxide enriched, and a set of controls in two greenhouses. Using a microscope, the number of surviving cells in the three treatments and controls were counted in three replicates daily. <b>Results</b> In the increased temperature environment, or treatment, the phytoplankton grew slower and began to die off quicker than the control. In the carbon dioxide enriched treatment, the phytoplankton grew quicker and died off slower than the control. In the carbon dioxide enriched and increased temperature treatment, the phytoplankton grew slower and died off slower than the control. <b>Conclusions/Discussion</b> Phytoplankton are affected by Global Warming. The increased temperature decreases the survival rate of Nannochloropsis and was more of a factor than the enriched carbon dioxide treatment. Since phytoplankton are at the bottom of the food chain and are a major producer of the world's oxygen, their survival can influence the ecosystem of our oceans and the planet. To reduce this threat we must keep the balance of nature and clean up the environment.	
<b>Summary Statement</b> My project is about the effects of Global Warming on the survival of the phytoplankton Nannochloropsis.	
<b>Help Received</b> Original phytoplankton cultures were supplied by HSU Marine Lab, and Dad helped type the report.	