



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Finnegan N. Barry</b>	<b>Project Number</b> <b>J1702</b>
<b>Project Title</b> <b>Can Crabs Beat Global Warming?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this project was to find if ocean acidification and global warming affect the thermal tolerance of crabs. <b>Methods/Materials</b> Crabs were collected from the intertidal and put them in tanks of either a pH of 8.0 or 7.1. An infrared sensor was attached to the crabs and connected to a heartbeat recording system. The heartbeats were converted to a heart rate. I attached the crabs to this system and then set them in a water bath in a jar of water at the pH level they had been living in. Over the course of an hour I increased the temperature of the water bath and simultaneously recorded water temperature and crab heart rate. I then compared temperature and heart rate to find the critical temperature. <b>Results</b> The crabs under the influence of the lowered pH had a lower critical temperature. I found that females were also more vulnerable to the lowered pH than the males. <b>Conclusions/Discussion</b> I concluded that crabs' thermal tolerance is affected by global warming in a negative way. This is important because this could also affect other crustaceans in the same way and affect the food web.	
<b>Summary Statement</b> My project is about how ocean acidification affects crabs thermal tolerance.	
<b>Help Received</b> Dr. James Barry helped with experiment; Used MBARI lab equipment.	