



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Brooke J. Rothschild-Mancinelli	Project Number J0517
Project Title The Effect of Salt on the Boiling Temperature of Water at Different Altitudes	
Objectives/Goals My objective is to determine if at higher elevations the difference between the temperature of the boiling point of distilled water and salt water changes.	
Abstract Methods/Materials My results showed that as the elevation increased, the difference between the boiling point of the salt water and the plain water became greater. I went to different altitudes and boiled different molarities of salt water. I knew that at an increase in altitude, the boiling temperature went down. I went to four different elevations: 10, 687, 2,396, and 4,294 meters. At each of these elevations, I boiled a 0, 1, 2 and 4 molar solution of sodium chloride and measured the boiling point temperature with two kinds of thermometers. At each altitude, I repeated this experiment three times so I could replicate the data. In my results I saw that, as I hypothesized, with an increase in altitude the boiling point temperature increases.	
Results My results showed that as the elevation increased, the difference between the boiling point of the salt water and the plain water became greater.	
Conclusions/Discussion I conclude that the difference between the boiling point temperature of salt and plain water increases with altitude. These results have implications for where we might search for life in brine pockets beneath the surface of Mars, where water exists below its triple point on the surface of the planet.	
Summary Statement Seeing if when salt water and distilled water is boiled at different altitudes would the difference in the temperatures change.	
Help Received My dad helped me conduct the experiments by holding the cigarette lighters and the beakers and arranged for my airfare. My mom helped me format the graphs.	