



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Katherine L. Hahn	Project Number J1911
Project Title Showering: More Heat with Less Water	
Objectives/Goals My objective is to identify the key aspects of a showerhead design that transfers the maximum amount of heat to the body using the least amount of water.	
Abstract	
Methods/Materials The materials used in this project were, funnel, hose, thermometer, plastic bag, fifteen showerheads, and timer. Procedures: 1. Fifteen showerheads were timed to see how long six gallons took to spray. A plastic bag of 90 degree water was then hung twelve inches away from the shower in a position that the shower hit when running. 2. Each showerhead sprayed out six gallons of water, hitting the bag when running. The shower sprayed water at 110 degrees. 3. After six gallons have been sprayed out, the temperature of the bag was recorded to see how much the temperature of the bag rose.	
Results Showerheads numbers 2, 6, 7, and 15 had the best GMP per temperature increase.	
Conclusions/Discussion Based on this experiment, it appears that showerheads that spray droplets of water in random patterns tend to transfer more heat with less water.	
Summary Statement By using a showerhead with the key aspects identified in this experiment, less water will be wasted by taking showers, even by changing something as little as a showerhead can really help conserve water.	
Help Received Dad helped edit papers. Mom helped with board.	