



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Peter S. Hernandez	Project Number J0210
Project Title What Makes a Hitter's Park? Do Certain Atmospheric Conditions Affect the Home Run Statistics of Major League Ballparks?	
Abstract Objectives/Goals To find out if altitude, temperature, and average humidity have an effect on the number of home runs hit at Major League Baseball parks. My hypotheses were that: a) ballparks located at higher altitudes would have more home runs because thin air means less drag on the ball, b) ballparks in warmer areas would have more home runs than those in colder areas, because hot air rises and the ball would stay up longer, c) ballparks with less humidity would have more home runs, because water in the air makes it denser and would keep the ball down not let it go as far. Methods/Materials I chose certain Major League ballparks based on where they were located, to get a variety of conditions. I eliminated parks that were not open-air, because I wouldn't have any way of knowing what the air conditioning was like. I got statistics from the internet about the home run averages, altitude, average temperature, and relative humidity for each park. I narrowed down the parks based on how many of the same years I could find home run statistics for, and used Microsoft Excel to compare the data. Results I found that relative humidity and altitude do seem to have a significant effect on home run statistics. Parks at higher elevations and parks with drier air had more home runs. Temperature didn't seem to be a major factor. Conclusions/Discussion I had to use the information I could get easily in the three weeks my school allowed for my project. Those weeks were not during the baseball season. I could probably get more accurate information and results if I could get information from each city's paper for actual game days over the baseball season, and base my conclusions on actual game day data. There are other things that affect home runs, like the physical dimensions of the ballpark, and how good the pitchers and batters are, but sometimes even when the pitcher isn't doing well and there are really good batters, there are lots of hits, but no home runs, so it makes sense that atmospheric conditions make some kind of difference.	
Summary Statement My project is about the effects of altitude, temperature, and relative humidity on the home run statistics of Major League Baseball parks.	
Help Received I am just learning to use the internet and don't type too well, so my mom helped me do the searches and type my report. My mom and my dad taught me how to set up the Excel worksheets and formulas. Mom helped me glue everything to my display after I got it laid out.	