



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Jeni P. Penunuri	Project Number J0619
Project Title How Does the Air Pressure Affect a Hurricane?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this this project is to determine how air pressure affects hurricanes. I will make a model hurricane and measure the air pressures within this hurricane system, while varying the the inlet pressure which is introduced into this system. I hope that we will learn a lot from my project and that scientists will use this information to help control hurricanes or warn people.</p> <p>Methods/Materials A model hurricane system was put together using two air humidifiers, which supplied cool white fog into a clear plastic chamber. An air compressor was used to introduce pressurized air into this chamber via two small copper inlets situated near the top of the chamber and opposing each other. An air vortex was created. Using different inlet pressures of 0, 50, 150, 200, and 250 cmH20, chamber pressures were measured with a manometer at various levels (level 1, Level 2, and level 3). At each level measurements were taken at distances 0cm, 3cm, 6cm, and 12cm from the eye of the hurricane.</p> <p>Results As the air pressure entering the system via the inlet is increased, the individual measured air pressures also increased in general. However, the eye of the hurricane had no pressure or very little pressure if any. Furthermore, as one moves away from the eye of the hurricane and gets closer to the wall of the hurricane, the air pressure increases. The pressures in the lower levels of the hurricane get slightly weaker compared to the higher levels.</p> <p>Conclusions/Discussion In general, the greater the pressures in a hurricane system, the stronger and more violent the hurricane. However, the eye of the hurricane remained calm and with no change or minimal change despite various inlet pressures. The minimal change may be due to static air pressure within the system. The eye of the hurricane must be the safest place inside a hurricane. The greatest air pressures occurred closest to or in the wall of the hurricane. For practical purposes, the wall of the hurricane must be the most dangerous part of the hurricane for people who are trapped within a hurricane storm. This experiment also showed, that the outermost top layer or the upper outer ring of the hurricane has the most pressure of all points in a hurricane. This means that if an airplane gets caught in this part of the storm, it would most likely get sucked into the spiral and never come out again. Therefore, pilots should try to avoid this part of the storm.</p>	
Summary Statement My project is about hurricanes and how the air pressure affects the hurricane.	
Help Received My Dad helped me build the vaccum for my hurricane.	