



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Catherine Dang; Janki Kaneria	Project Number S0811
Project Title Who Dunit?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to isolate sources of pollution in the Santa Ana watershed using Nitrogen Isotope Fingerprinting, and develop a better understanding of the Nitrogen Cycle by comparing samples from rain days and the end of the dry season.</p> <p>Methods/Materials Use Various tools to filter, and test the samples, in including Mass Spectrometer, Reagents, Freeze-Dryer, Combustion system, Fiber Glass filter, and much more. Use NIST standards to compare and calibrate equipment.</p> <p>Results The delta value of N15 decreased over rain days, and Nitrogen amount went up. Also a correlation was found between the amount of nitrogen and the delta N15 value. Hidden Valley and Prado both fell in the range indicating sewage water. City Creek was within natural limits as was Sycamore Creek, which could result in a presence of fertilizer or a natural source. Rancho Jurupa Park was the Outlier, and its odd results could perhaps be explained by it exclusion from flowing water.</p> <p>Conclusions/Discussion To further this project it would be beneficial to analyze the samples for Delta O18 and use the cross reference graph to better pinpoint the sources of pollution.</p>	
Summary Statement Using Stable Nitrogen Isotope Fingerprinting to isolate sources of pollution in the Santa Ana Watershed.	
Help Received Used Lab equipment at University of California in Riverside under the supervision of Dr. Sickman. Dr. Sickman also helped us approach our final topic. Parents helped drive us to sampling sites and gather required materials.	