



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Lindsey N. Schrock	Project Number J0220
Project Title Methods of Reducing Exposure When Filling an Anesthetic Vaporizer	
Abstract Objectives/Goals The objective is to determine which method of pouring agent into an anesthetic vaporizer will cause the least amount of personal exposure to the agent. Methods/Materials I used three methods of pouring agent into a vaporizer. I poured directly into a Funnel-filled vaporizer. Next, an Anti-spill Adaptor was used to pour agent into a Funnel-filled vaporizer. Last, I used a Key-fill device and a Key-filled vaporizer. Acetone was used as an alternative liquid to an anesthetic agent. A chemical detector was placed ten to twelve inches above the vaporizer during filling. (All measurements taken in parts per million,(ppm)). Each method of filling was tested five times to obtain average results. This experiment was conducted in a well ventilated area. Results The Key-fill device plus vaporizer caused the least amount of personal exposure. During the Funnel-fill and Anti-spill techniques, spilling sometimes occurred, causing exposure rates to increase. Conclusions/Discussion With the Key-filled vaporizer and device, the least amount of exposure occurred. This proved my hypothesis to be correct. These results can help doctors, nurses, and veterinarians keep themselves safe when working with the equipment they use.	
Summary Statement I am trying to determine which method of filling an anesthetic vaporizer will cause the least amount of exposure to the operator.	
Help Received My dad helped by supervising me during the experiment, and providing the equipment.	