



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Ryan M. Goldstein	Project Number J1009
Project Title Does Gender, Age, or Smoking Habits Affect a Person's Sense of Smell?	
Abstract Objectives/Goals The objective of this project is to investigate whether gender, age or smoking habits affect a person's sense of smell. Methods/Materials Twelve distinct scented oils and one empty control were placed in numbered jars. Test subjects were asked to identify what the scent was. 460 test subject evaluation forms were then graded and scored. The data was stratified and 95% confidence intervals were calculated. Results The average number of correct responses for all males was 5.88 with a sample size of 142 (The confidence interval was 5.50 - 6.26.). For females the average was 6.32 with a sample size of 319 (The confidence interval was 6.06 - 6.58.). The average for all participants from the older group(40 years old and over) was 5.96 and the sample size was 215 (The confidence interval was 5.64 - 6.28). The average for the younger group (less than 40 years old) was 6.38 with a sample size of 245 (The confidence interval was 6.08 - 6.68.). The average of all smokers was 6.95 with a sample size of 79 (The confidence interval was 6.44 - 7.47.). The average of all ex-smokers was 5.50 with a sample size of 104 (The confidence interval was 5.16 - 5.96.). The average of all non-smokers was 6.22 and the sample size was 277 (The confidence interval was 5.95 - 6.49.). Conclusions/Discussion This project did show a higher rate of correct responses for females over males and for younger over older subjects, but these differences did not achieve statistical significance. No clear trend was seen for the influence of smoking. Non-smokers scored higher than ex-smokers and this difference was very close to achieving statistical significance. The group of smokers, however, scored the highest, but this was the smallest subgroup and the confidence interval was the broadest. These results tend to support the hypothesis, but a larger sample size would be needed to achieve statistically significant results.	
Summary Statement Does gender, age or smoking habits affect a person's sense of smell?	
Help Received Father helped calculate confidence intervals. Parents provided transportation to shopping areas.	