



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Nikhil Lonberg	Project Number J1406
Project Title The Effect of Impaired Judgment and Speed on Traffic Accidents	
Abstract Objectives/Goals The interactions between cars in traffic are not just attributed to parameters such as the distance to the car in front; they are affected by the behavior of the drivers. Some drivers are speeders, have bad judgment on the road, or both. These behaviors cause accidents. But which of them cause more accidents: bad judgment or speeding? Methods/Materials The hypothesis is tested by simulating the interactions between cars on a track with a Microsoft Visual Basic computer program. The program will place traffic on a single lane 20-mile stretch and move the cars forward in one-second intervals. A random number generator is used to assign the drivers speed and judgment values. The program will blame whichever car runs into the car in front of them and remember its driver type. This way data as to drivers causing the most accidents can be collected. Results The data gathers that drivers with poor judgment cause the majority of accidents. It also shows that it is uncommon for accidents to occur when every car has good judgment. Conclusions/Discussion The results suggest that drivers with poor judgment are more at fault for traffic accidents. This supports the hypothesis that judgment is a greater factor in preventing accidents than speed. This does not mean that speed is not a major contributor to traffic accidents. There are many adjustments to the computer program that can be made to do this experiment differently or to study different patterns.	
Summary Statement The project uses a computer program to test whether impaired judgment or speeding has a greater effect on traffic accidents.	
Help Received Father helped debug program; Mother helped with presentation and assembly of project.	