



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> Eden C. Delphey	<b>Project Number</b> <b>J0310</b>
<b>Project Title</b> <b>Talking on a Cell Phone while Driving: Is It Dangerous?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective was to determine if talking on either a hand-held or hands-free cell phone while driving interferes with steering, scanning and concentration skills necessary for safe driving.</p> <p><b>Methods/Materials</b> A driving simulator program that scores drivers on steering, scanning and concentration was installed on a home computer, along with a steering wheel and brake pedals. Thirty-four participants age 16 or older "drove" the course under these driving conditions: (1)without any distractions, (2)while answering questions on a hand-held cell phone, (3)while answering questions on a hands-free cell phone and (4)while counting backwards from 400 by 7s.</p> <p><b>Results</b> The total score (steering, scanning and concentration combined) that drivers received when talking on a hand-held cell phone was, on average, 24% lower than the score they received when driving undistracted. However, their steering score was only affected a little by the cell phone conversation. The main interference was with scanning and concentration. When drivers used a hands-free cell phone, all interference with steering was eliminated, but total scores did not improve much because answering mentally challenging questions still caused a lot of interference with scanning and concentration. Drivers also had problems with scanning and concentration (but not steering) when trying to drive while counting backwards.</p> <p><b>Conclusions/Discussion</b> My conclusion is that talking on either a hand-held or hands-free cell phone interferes with scanning and concentration. Using a hands-free phone gives drivers a little better steering control, but the real problem - driver inattention to what is going on around him - is not eliminated. Steering seems to be a more mechanical task that can be done even if the driver is distracted.</p>	
<b>Summary Statement</b> This project uses a driving simulator program on a computer to test whether talking on a cell phone while driving interferes with steering, scanning and concentration abilities.	
<b>Help Received</b> My mother helped me find an affordable driving simulator program to use and asked the questions over the phone to each subject while I ran the tests.	