



# CALIFORNIA STATE SCIENCE FAIR

## 2009 PROJECT SUMMARY

Name(s) <b>Sierra J. Rupnow</b>	Project Number <b>J0919</b>
Project Title <b>Electroma... What?</b>	
<b>Objectives/Goals</b> My experiment is designed to find how much electromagnetic radiation is emitted by each of four ways (using the phone directly, on speakerphone, with a plug-in headset, or with a wireless headset) of talking on a cellular phone.	<b>Abstract</b> To perform my experiment, I used an electromagnetic radiation sensor, a radiation-free room, three cell phones, a plug-in headset, three wireless headsets, a ruler, a flat surface, and an accessible landline. To answer my objective, I placed a call from a cellular phone and, using the electromagnetic radiation sensor, found from which area the phone gave off the most electromagnetic radiation. I then placed five more calls and used the sensor to record the amount of radiation given off throughout each call. I repeated the process placing the sensor 22 centimeters away from the phone during the calls to simulate the distance the phone would be from the head if the user were talking on speakerphone or with a headset. I performed this test with each phone. Subsequently, I repeated these tests using speakerphone, a plug-in headset, and a wireless headset for each phone.
<b>Results</b> From my experiment, I found that each tested phone gave off the same amount of radiation independent of the method used to talk on it, but neither the plug-in headset nor the wireless headset gave off any radiation while in use.	
<b>Conclusions/Discussion</b> In conclusion, the method that keeps the phone itself farthest from the speaker's head will result in the lowest amount of radiation going into the speaker's head.	
<b>Summary Statement</b> For my experiment, I tested which method of talking on a cellular phone (directly, on speakerphone, with a plug-in headset, or with a wireless headset) emits the lowest amount of electromagnetic radiation.	
<b>Help Received</b>	