



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Philip T. Cunningham	Project Number J0710
Project Title WiFi Waves	
Objectives/Goals The purpose of my experiment is to determine which materials would cause the most interference for wireless networking: stainless steel, wood, plastic, or glass and at which distance: 14 feet or 38 feet?	
Abstract Methods/Materials Materials: 1. A Linksys wireless-g router; 2. A Dell laptop; 3. One plastic bowl; 4. One stainless steel bowl; 5. One wood box; 6. One glass bowl; 7. Paper and pencil to record data; 8. Tape measure to measure distances. Procedure: 1. Turn on the laptop and router 2. Place the laptop 14 feet away in clear view of the wireless router so no substances will interfere 3. Check the signal strength and signal speed on the laptop in megabytes per second (mbps) 4. Record the Mbps and signal strength 5. Place one of the bowls or boxes over the router and wait one minute 6. Check the signal strength and speed on the laptop 7. Record the Mbps and signal strength 8. Repeat steps 5, 6 and 7 with different bowls or boxes over the router. 9. Repeat steps 3 # 8 for a total of five trials with each material 10. Now place the laptop 38 feet away from the router 11. Repeat steps 3 # 8 with the laptop 38 feet away from the router with each material for a total of five trials each	
Results The results of the experiment showed that the signal strength was affected by the stainless steel when the laptop was 38 feet away from the router.	
Conclusions/Discussion The conclusion I came to is that the distance from the router to the laptop played the biggest role in signal strength. The substances tested only slightly weakened the signal strength.	
Summary Statement To determine which substances most interfere with wireless networking.	
Help Received Dad helped with measurements, brother helped switch materials.	