



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Abdulla Alexander</b>	<b>Project Number</b> <b>J1301</b>
<b>Project Title</b> <b>Dead Zone</b>	
<b>Objectives/Goals</b> My project explores what substances affect cell phone signals the most. It also considers which cell phone carriers can resist different substances better than others	
<b>Abstract</b> <b>Methods/Materials</b> The first thing that I did was get all the substances that I was going to test and three different phones, each with a different carriers: Verizon, T-mobile, and AT&T. I bought bricks, drywall, plywood, and solid wood. I made a miniature house out of all of these substances and put all three cell phones inside them one at a time. After I finished testing everything, I got all three cell phones and put them extremely close to a microwave to test electrical interference. I recorded all of these things in my notebook and then added them into Microsoft Excel to make a table.	
<b>Results</b> In the findings of this experiment, the substances that affected Verizon's bars the most were bricks. For AT&T it was the electricity that affected the number of bars the most. The substance that affected the reception the most for T-mobile was also electricity.	
<b>Conclusions/Discussion</b> In conclusion, the substances that affected the signals most were the bricks, and electricity. This was the case for all three carriers that I tested#Verizon, T-mobile, and AT&T. Drywall caused the next level of interference. Following that, came the solid wood and plywood. In general, AT&T had the strongest reception with all of the barriers.	
<b>Summary Statement</b> My project is to determine what substances disturb cell phone reception the most.	
<b>Help Received</b> My Mentor, Ms. Najwan Nasereldin,	