



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Arman Ghorbani</b>	<b>Project Number</b> <b>S0308</b>
<b>Project Title</b> <b>Believing Is Seeing</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My objective is to see why some groups are affected by suggestion and others are not. My goal is to figure out why certain groups are more easily persuaded to see something that isn't happening, while other groups are immune to persuasion. <b>Methods/Materials</b> Materials consist of wood to make a box, a laser pointer, 20 motor sounds, people of all ages and genders, fake wires and switches, blankets to cover all light, pitch dark room, paper and pencil, and materials to construct box (such as screws, drill, tape, etc.). To carry out the experiment follow this method: 1. First I took wood and constructed a box with an open side and the opposite side with holes, big enough for sound to transfer clearly, but small enough so no one sees inside. 2. Get blender motors or motor sound clips or anything similar and put inside the box. 3. Add the laser pointer and switches and wires to make the box look high tech. 4. Use people of all ages and genders in a dark room and shine the laser on the wall. Make sure the laser dot is the only thing visible. Tell them the laser point on the wall will move and to draw, on the provided paper, the design the laser makes. The laser, however, never moves. 5. Record the number of drawings each individual drew. 6. Repeat many times with different people of different ages and genders. <b>Results</b> It ended up being that either people kept seeing the laser move all 20 times or didn't see it move at all. All the younger children and older adult females did see it move. All the teenagers, adult males, and younger adult females saw no movement. The laser never moved once, however. <b>Conclusions/Discussion</b> My conclusion is that younger children are more susceptible to persuasion. Teenagers undergo puberty which releases hormones from the hypothalamus which affects the way the thalamus sends signals to the parietal lobe, which perceives information, making them not see the laser move. Adult males continue to not see the laser move but older adult females do see it move. This is due to the hormones that are no longer being release when they begin to undergo menopause. Their perception is reversed to the original because the hormones that were being secreted are no longer being released because the ovaries shut down. This reverts the changes caused in the way the thalamus interprets the information the eyes, ears, etc. present it with. If they believe it, they will see it.	
<b>Summary Statement</b> If an individual is persuaded to believe to see something that isn't real, they will see it anyway due to the power of suggestion, depeding on their hormone levels.	
<b>Help Received</b> My father helped me saw the wood for the box. My past teacher allowed me to use his resources to do research.	