



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> Wendy Y. Su	<b>Project Number</b> <b>S0316</b>
<b>Project Title</b> <b>Contingent Color/Edge Adaptation: McCollough Effect</b>	
<b>Abstract</b> <b>Objectives/Goals</b> This experiment is set out to test: 1. The non-interocular quality of non-contingent, short-lived rapid color aftereffects of second long stimulation, thus proving contingent phenomenon of the McCollough Effect and 2. The strength of the effect in regards to the condition of myopia.  If the McCollough Effect is dissimilar from a short-lived, transient eye after-effect, the edge detectors that are responsible for ME should locate past the optic chiasm, where the convergence of the inputs of the two eyes occurs. Age and eye conditions should not have any effect on the occurrence of the effect, but might affect the strength of the after-effect. <b>Methods/Materials</b> Microsoft PowerPoint program, Adobe Photoshop 7.0, Stop Watch/Timer, Volunteers Procedure: 1. Record eye condition of each human subject (myopia, hyperopia, astigmatism, ect.) 2. Have the human subjects cover one eye and view the magenta grating for 30 seconds and record results. 3. Allow the volunteer to be exposed to the gratings (3 seconds each, alternately) for five minutes 4. Record what color fringes the volunteers can see on the test gratings 5. Ask the volunteer they he/she takes in caffeine or certain drugs on a daily basis. 6. Continue this test for 20-30 human volunteers. <b>Results</b> The strength of the McCollough effect does not connect with the volunteer#s eye conditions. All volunteers indiscriminately could see the effect in some form. <b>Conclusions/Discussion</b> The McCollough effect is a contingent color/edge effect that originates from visual systems past the optical chiasm and thus, is not effected by retinal adaptation.	
<b>Summary Statement</b> The interocular quality of the McCollough Effect is proven through its indiscriminate adaptive quality in all volunteers despite their retinal condition of myopia.	
<b>Help Received</b> N/A	