



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Diane M. Marcus	Project Number S1411
Project Title Perception and the McCollough Effect	
Abstract Objectives/Goals The purpose of this project was to determine the effect of pre-induction gratings in perception of the McCollough Effect, and to establish where in the visual cortex the Effect is processed. Methods/Materials Students grades 9-12 were tested for color blindness and then split into groups. Students were given pre-induction gratings according to their group for a ten minute period, then the induction gratings for ten minutes. A test of perception followed immediately on achromatic gratings, and after a ten minute rest period with a one minute refresher, students were tested again. Four tests total were conducted. Materials required included gratings and a stopwatch. Results The pre-induction gratings had a drastic effect on perception of the McCollough Effect. Students in group two had the highest initial perception without decay, followed by students in group one with slight decay. Students in group five closely paralleled those in group one, while students in group four perceived the weakest Effect and students in group three initially perceived the reversed Effect and by the final tests perceived either no Effect or the McCollough Effect. Conclusions/Discussion The perception of the reversed Effect by students in group two supports the idea that the Effect is processed in V-1 where cells are orientation specific, and the results of group five support the idea that the visual color channels are independent of one another. Pre-induction gratings clearly play a large role in perception of the McCollough Effect.	
Summary Statement This project investigates the effect of pre-induction gratings on the McCollough Effect in the attempt to discover where the Effect is processed in the brain.	
Help Received The Villa Park AP Psychology teacher, Mr. Hart, permitted me to test all of his students in order to obtain my data.	