



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Rianna E. Isaak	Project Number J0316
Project Title Determining the Effects of Aging, Gender, and Education on Brain Hemisphere Communication	
Objectives/Goals My objective is to determine if age, gender, and education, affect brain hemisphere communication (BHC).	
Abstract Methods/Materials I made a PowerPoint presentation of 20 slides with the following words printed one per slide: red, yellow, blue, black, and green. Each word appears in a font color other than its own name. I tested five females and five males in three categories: 20-year-olds, 50-year-olds, and 80-year-olds. In the first test, I timed how long it took the participant to read each of the 20 words. In the second test, I timed how long it took the same participant to identify the font color of each of the 20 words. The absolute value of the difference between test #1 and test #2 is calculated as the participant's BHC score.	
Results I found as age increased, so did the average BHC score (20-year-olds = 6.59; 50-year-olds = 8.75; and 80-year-olds = 12.26). The older we get the more dramatically our brain hemisphere communication slows down. With respect to gender, I found that males had a lower average BHC score than females (20-year-olds: Males = 5.19 and Females = 7.98; 50-year-olds: Males = 5.61 and Females = 8.89; 80-year-olds: Males = 9.49 and Females = 15.72). This means that the older people get, the larger the gap between BHC scores of males and females. With regard to the influence of post-secondary education, I found there to be no definite correlation between years of education and the BHC score.	
Conclusions/Discussion Age and gender both have definite effects on brain hemisphere communication. As age increases so does average BHC score. The older we get the more dramatically our brain hemisphere communication slows down. In each age group, males had a lower average BHC score than females. Furthermore, brain hemisphere communication slows down to a greater extent with age among females compared to males. Post-secondary education appeared to have no correlation to BHC scores.	
Summary Statement My project determines if age, gender, and education, affect brain hemisphere communication (BHC).	
Help Received Mother drove me to test each of my participants; Father helped with the board	