



# CALIFORNIA STATE SCIENCE FAIR 2016 PROJECT SUMMARY

<b>Name(s)</b> <b>Lauren R. Fishman</b>	<b>Project Number</b>  36888
<b>Project Title</b> <b>Expressing Emotion: Physiological, Verbal, and Facial Differences</b>	
<b>Objectives/Goals</b> This experiment aims to discover the differences in the way boys and girls (ages 6-13) and senior citizens (persons 65+) express emotions, including physiological, verbal and facial differences. Through comparing the results to previous studies on middle-aged adults, the experiment will help review how emotional expression differs not only with gender, but also with age. <b>Abstract</b> <b>Methods/Materials</b> 80 subjects (44 children and 36 senior citizens) were individually exposed to 3 multi-media videos, each meant to elicit a different emotional reaction (happiness, sadness). Recorded measurements included each subject's physiological reactions (pulse), verbal responses and facial expressions (mouth, cheek, eyebrow and eye movements). <b>Results</b> Analysis for the 6 measurements displayed many differences in how males and females express emotion. Data for the happy video in children ages 6-13 shows that boys and girls outwardly express happiness over 70% from both genders smiled/laughed). Inwardly, however, girls' pulse increased nearly double that for boys. Regarding the sad video, 70% of girls grimaced while 40% of boys did. Inwardly, girls' pulse increased by 0.1 beats per minute; boys' increased 3.3 BPM. Results for seniors proved that women are externally and internally more expressive than men. 100% of women smiled/laughed during the happy video; 66% of men did. However, women's pulse jumped 8 BPM while men's only jumped 2.94 BPM. During the sad video, 89% of women grimaced, but only 22% of men reacted similarly. Internally, women's pulse increased by 6.94 beats per minute, while men's increased by 1.22 BPM. <b>Conclusions/Discussion</b> When the results of this experiment are compared to past research on middle-aged men and women, many conclusions can be made regarding the impact of age and gender on emotional expression. Prior studies discovered that men outwardly express neither happiness nor sadness, while women clearly convey both. The results from this particular experiment suggest that while girls continue to express emotions throughout their lives, boys fall under social pressures as teenagers to hide their emotions. However, when boys reach a certain age (around 65), they stop worrying about conforming to social norms and thus express their emotions.	
<b>Summary Statement</b> There are many differences in the way males and females (ages 6-87) express emotion (including physiological, verbal and facial differences), and these differences by gender vary with age.	
<b>Help Received</b> None	