



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

<b>Name(s)</b> <b>Ayla Richland</b>	<b>Project Number</b> <b>J0418</b>
<b>Project Title</b> <b>A Catchy Bug</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives</b> The objective of this experiment is to determine if side of brain dominance effects how often one experiences earworms.</p> <p><b>Methods</b> Forty-six middle school students were asked to complete the "Involuntary Musical Imagery Scale (IMIS) questionnaire, developed by G. A., Floridou, V.J. Williamson, L., Stewart, and Müllensiefen from Goldsmiths University (<a href="https://www.gold.ac.uk/media/documents-by-section/departments/psychology/IMIS-pen-&amp;-paper-version-&amp;-scoring-info.pdf">https://www.gold.ac.uk/media/documents-by-section/departments/psychology/IMIS-pen-&amp;-paper-version-&amp;-scoring-info.pdf</a>). They then completed an online brain dominance test developed by Eterna, a company specializing in biofeedback technologies (<a href="http://www.ipn.at/ipn.asp?BHX3325185944214006">http://www.ipn.at/ipn.asp?BHX3325185944214006</a>). The results of both assessments were compared to determine if there was any correlation between the degree of an individual's brain dominance and the frequency in which they experienced earworms.</p> <p><b>Results</b> Scores from the IMIS assessment (earworm susceptibility ranges from 6 (highest susceptibility) to 0 (lowest susceptibility) among right brain dominant individuals: 17.6% scored a 6, 70.5% scored 5 or more, 94% scored 4 or more, and 100% scored 3 or more. Among left brain dominant individuals: 14.8% scored a 6, 37% scored 5 or more, 55.5% scored 4 or more, 77.7% scored 3 or more. and 22.2% scored less than 3. Among individuals without a dominant side of the brain: 50% scored a 5 and 100% scored a 4 or more. A scatter plot diagram of the collected data showed that right-brain dominant subjects consistently scored at least a 3 on the earworm susceptibility score.</p> <p><b>Conclusions</b> The data showed that if one is right-brain dominant, then earworms are more likely to occur. Conversely, if an individual is left-brain dominant, they don t experience earworms nearly as consistently.</p>	
<b>Summary Statement</b> My experiment proved that there is a correlation between brain hemispheric dominance and earworm frequency.	
<b>Help Received</b> My mom helped me edit and type my report and design my board. Dr. Jakubowski provided me a link to an earworm questionnaire to use for my experiment. Mr Hartung, my science teacher, helped me with my documents and answered my numerous questions.	