



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

<b>Name(s)</b>  <b>Audrey Ha</b>	<b>Project Number</b>  <b>S0412</b>
<b>Project Title</b>  <b>Fostering Racial Tolerance in High Schools: Researching Correlations between Tolerance, Activities, and Demographics</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives</b> In 2017, 4,832 race-bias hate crimes occurred in the U.S. (FBI, 2017). Previous research showed that high schoolers receiving character education became more accepting as adults. However, the research only studied a small sampling of student tolerance exercises with gaps in demographic effects. The goal of this project was to identify effective high school racial tolerance activities and the demographics that may benefit.</p> <p><b>Methods</b> Online surveys were created for U.S. high school students and faculty and approved by the school IRB. After collecting informed consent, both surveys identified participant demographics, student body tolerance levels, and a diverse range of current tolerance activities. The nationwide surveys received responses from 1,095 students and 359 faculty throughout 46 states. Using the R statistical programming language, a Spearman Rho test was conducted to find r-value correlations between tolerance levels and activities/demographics. The r-values were converted to p-values.</p> <p><b>Results</b> Moderate (<math>p &lt; 0.05</math>) to significant (<math>p &lt; 0.01</math>) correlations existed between higher tolerance levels and various activities/implementations, including student and faculty diversity, English Second Language classes, studying human rights, and studying historical racial injustices. Male students observed less race-based friend group exclusion among peers and perceived teachers as more dedicated to decreasing race-based exclusion. Older students noticed more interracial interaction opportunities. Students who were American Indian, Black, Latino, Middle Eastern, and Pacific Islander were moderately to significantly comfortable befriending students of other races.</p> <p><b>Conclusions</b> The findings suggested modifications to interracial interaction, language programs, and social studies programs could lead to more student tolerance. The results suggested male students were more tolerant due to faculty focus on males and that older students took more initiative to engage with other races. Providing female, younger, and Asian/European-American high schoolers with opportunities for tolerance activities could be beneficial. The trends studied in this project, including successful racial tolerance activities and groups that benefit, may serve as a model for high schools to effectively foster tolerance and shape a more inclusive generation.</p>	
<b>Summary Statement</b>  I studied effective methods of fostering racial tolerance in U.S. high schools by researching successful tolerance activities and the demographics that may benefit.	
<b>Help Received</b>  My science teacher assisted me by reviewing the survey and aiding with survey distribution. Statistical analyses were conducted under the supervision of a professional statistician.	