



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

Name(s) Gavin O. Jimerson	Project Number J0410
Project Title The Association between Cybersecurity Knowledge and Password Strength	
Abstract Objectives/Goals My question was whether a college students knowledge of cybersecurity would be associated with their password strength. This question is particularly important as young adults use digital technology daily (such as phones, tablets, and computers) and they are establishing behavior patterns that will likely continue into adulthood. Methods/Materials I created a survey to collect basic demographic information (5 questions) and to examine a persons cybersecurity knowledge (10 questions) and password strength (10 questions). During a three week period college students were invited via email and online postings to complete each of the survey questions online using a computer, phone, or tablet. Results Analyses of the responses from 309 participants (mean age 20.6 years, 54% female) revealed a statistically significant (probability < .000) Pearson correlation (.40) between participants cybersecurity knowledge and password strength. Further analyses of those with high levels of cybersecurity knowledge compared to those with low levels of cybersecurity knowledge demonstrated that those with higher levels of cybersecurity knowledge had statistically significant higher password strength scores (t = -8.81, probability < .000). Conclusions/Discussion My hypothesis was, If a person has greater cybersecurity knowledge, then s/he will have a stronger password. Data from this study supports this hypothesis. Understanding this positive association between higher levels of cybersecurity knowledge and password strength provides a foundation for further research and practice to build upon. Further emphasis on educating users about cybersecurity knowledge warrants further attention as this may be a means to enhance the use of stronger passwords and provide greater protection for companies, governments, and individuals.	
Summary Statement Using the measures that I developed, my study identified a positive association between cybersecurity knowledge and password strength.	
Help Received My science teacher Mrs. Avers, provided guidance about preparing my science project. UCSB Professor Giovanna Vigna reviewed my survey questions to ensure that the answers were correct and were a good measure of someone's cybersecurity knowledge and their password strength.	