



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Akshar G. Patel	Project Number S1516
Project Title Libraries: Keepers of Knowledge or Convents of Bacteria?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to prove that library books bear high levels of bacteria which account for various illnesses. I hypothesized if I test one book from each section of the library for levels of bacteria and compare it them to the level of bacteria on the personal collection of my books at home, then the books from the library will yield a higher count of bacteria and account for more susceptible forms of bacteria and viruses.</p> <p>Methods/Materials By cultivating bacteria off of the books on nutrient agar-filled petri dishes and examining the bacteria under an electric microscope I was able to receive my results. I checked out one book from each section in the James S. Thalman Library as subjects to test and chose four books from my personal collection. For consistency and repetition, I decided to test each book three times. I tested 24 times for bacteria, 3 for each book, and left one as a control. Over a 7-day growth period I collected data for later analysis.</p> <p>Results At the end of my experiment, the average number of colonies for the books from the library was 11.5 and the average number of colonies for the books from home was 6.0. In almost every single case except one, the library books contained more colonies on the cover. Fungus was a factor visible on many of the books from both home and the library. Overall, it proved that books from the library do harbor more bacteria. The standard deviation for the library books was 7.2 and for the home books it was 3.0.</p> <p>Conclusions/Discussion My hypothesis was partially correct. The higher number of bacteria accounted as a true result. Partially this was already a question answered due to the fact that my statistics show that plenty of people come through the library system on a day to day basis. The only people that use my books are my family other than me. The factor of who uses those books is great in answering my hypothesis and affirming why it is correct. What I wasn't able to prove was that whether the bacteria on the books accounted for higher forms of bacteria and viruses and whether they have increased susceptibility or not.</p>	
Summary Statement My project focused around proving library books bear high levels of bacteria accounting for various illnesses, making it an unsafe environment.	
Help Received My cousin helped me design my display board.	