



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> Samantha M. Lieberg	<b>Project Number</b>  35165
<b>Project Title</b> <b>Book Worms: Determining the Effectiveness of the Standard Practice of Cleaning Library Books</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The Objective is to determine the effectiveness of the standard library cleaning method and the average amount of bacteria on library books. It also explores if there is a correlation between the books# genre, age, and number of checkouts to the amount of bacteria.</p> <p><b>Methods/Materials</b> Twelve library books from each age genre (three separate genres) were swabbed for bacteria on a cleaned and uncleaned section on the front and back covers. The bacteria was grown in a petri dish, and LB Agar was the medium. The colonies were counted after five and eight days. New books and new Ziploc Bags were also tested.</p> <p><b>Results</b> It was found that the standard library book cleaning method only reduced the amount of bacteria growing on library books by 10 percent. The genre with the most bacteria was juvenile, with an average of 42.22 Colony Forming Units.</p> <p><b>Conclusions/Discussion</b> The conclusion that has been made states that the library book cleaning method is not effective enough to use. It also has been stated in the conclusion that juvenile books have the most bacteria.</p>	
<b>Summary Statement</b> Bacteria from library books was grown to determine the effectiveness of library book cleaner and to see if there is a correlation between a book#s genre, age, and number of checkouts to the amount of bacteria.	
<b>Help Received</b> Ms. Erin McKay, a bio-tech professional, helped supervise my project as well as teach me many new things about bio-tech protocols. My mother, Christina Orsi, helped me organize the board and supplied funds for purchasing materials.	