



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Nigella M. Baur	Project Number J1102
Project Title Do Bigger Watersheds Have a Higher Coliform Concentration?	
Abstract Objectives/Goals The objective of this experiment was to explore water quality and answer a scientific question: Do bigger watersheds have more coliform bacteria? Methods/Materials Samples were taken from five watersheds in the Humboldt Bay area near Arcata, California. The samples were analyzed for coliforms using the presumptive and confirmative tests at the Humboldt State University Biology Department lab. The area of the sampled watersheds were determined by visiting the City of Arcata's Environmental Services Department and using their Geographic Information System (GIS). The coliform concentration (MPN/100ml) and the area (acres) of the watersheds were compared. Results With 10,265 acres, the biggest watershed is Jacoby Creek and it also had the lowest number of coliforms at an average of 64 MPN. The smallest watershed is Campbell Creek (with 234 acres) and it had an average of 130 coliforms, the second lowest number after Jacoby Creek (the biggest watershed). The Beith and Grotzman Creeks watershed is median sized with 1,226 acres and it had an average coliform count of 295 MPN. Jolly Giant watershed has 798 acres and the average coliform count was 45 MPN. The Janes Creek watershed is the second largest watershed with 2,668 acres and it had by far the most coliforms, with over 1600 MPN. Conclusions/Discussion The results of this experiment show that there doesn't appear to be any correlation or relationship between the size of the watershed and the number of coliform.	
Summary Statement My project was to determine if the size of a watershed affects the coliform concentration in the creeks of northern Humboldt Bay area.	
Help Received Father helped collect samples and glue backboard; Technician Andrea Yip at HSU helped process water samples; Mother helped type abstract and fill out application	