



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

|   |                                       |
|---|---------------------------------------|
| <b>Name(s)</b><br><b>Tommy G. Robinson</b>  | <b>Project Number</b><br><b>J1122</b> |
| <b>Project Title</b><br><b>Bacterial Material: Bacterial Accumulation in Rivers and Creeks</b>  |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>I was trying to find out if there is more bacteria upstream or downstream and if it is safe to swim in the water.</p> <p><b>Methods/Materials</b><br/>To conduct my experiment, I built an apparatus with two mason jars and a .45 pore size membrane filter. To build the apparatus you bend the filter over the edge of the jar then screw on the cap over the filter with the water inside it, put the other jar on top, and flip the apparatus to start it. I ran 18 different apparatuses at once there being 3 locations on each of the three rivers and two samples at each location. So I collected samples and simultaneously ran them through the apparatus then plated them and counted the amount of colonies.</p> <p><b>Results</b><br/>There was more bacteria downstream than upstream but the downstream location to the middle location sometimes had varied results such as being much higher downstream or being the middle was a very close result or even a bit more bacteria.</p> <p><b>Conclusions/Discussion</b><br/>The conclusions I made were that there is more bacteria downstream because of the accumulation that may be coming from agriculture and livestock areas which on all waterways were very close to the water at the downstream locations. It was safe to swim in the water at all my sample locations but if there were to be a big rain that would cause lots of runoff and could make the water unsafe to swim in.</p> |                                       |
| <b>Summary Statement</b><br>In this project I compared if there was more bacteria upstream or downstream and if it was safe to swim in the water.   |                                       |
| <b>Help Received</b><br>I recieved help from Arcata High teacher Mrs.Conndit by letting me use the incubator and autoclave, also my sister delivered the petri dishes to the high school to be incubated.   |                                       |