



California Science Center  
**CALIFORNIA STATE SCIENCE FAIR**  
**2001 PROJECT SUMMARY**

**Your Name** (List all student names if multiple authors.)

**ZACHARY P JACOBSON**

**Science Fair Use Only**

**S1212**

**Project Title** (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)

**COLIFORM BACTERIA LEVELS IN THE KERN  
RIVER**

**Division**

\_ Junior (6-8) X Senior (9-12)

**Preferred Category** (See page 5 for descriptions.)

**12 - Microbiology**

**Abstract** (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Water samples (100ml) were taken from the Kern River in an attempt to form an understanding of the multiple variables present in the river ecosystem, and the effects on bacteria levels. Presence/ absence tests provided a MPN (most probable number) as an indicator of bacteria levels. The bacteria samples were gathered at a constant point along the shoreline, along with the applicable environmental data (i.e. temperature, water flow, dissolved oxygen, etc). The bacteria were then incubated under laboratory conditions for 24 hours, utilizing the IDEXX machine and procedure.

Statistical analysis of the data was critical to the interpretation of results. Percent deviations posed a particular problem, as well as the "t" test.

**HYPOTHESIS:** There will be a significant relationship between the level of coliform bacteria and the variables in the river ecosystem.

**CONCLUSION:** The level of error outweighs any statistical relationships; The hypothesis was neither supported nor disproved.

**Summary Statement** (In one sentence, state what your project is about.)

**A STUDY OF COLIFORM BACTERIA LEVELS IN THE KERN RIVER**

**Help Received in Doing Project** (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

**LAB EQUIPMENT PROVIDED BY KERN VALLEY HIGH SCHOOL**