



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Neil Gehlawat; Sean Matthews; Ryan Newbrough	Project Number S1309
Project Title A Study of MRSA	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of our experiment was to determine the percentage of MRSA carriers in the general, non-hospital, population and to compare the general population frequency with the frequency of MRSA carriers in hospital populations.</p> <p>Methods/Materials Materials- methicillin infused agar plates, regular agar plates, test tubes, .85 saline solution, toothpicks, sterile swabs, 21 human subjects, access to microbiology lab- includes incubator, colorimeter, and reference books. Procedure- First, we swabbed the nasal passages of 21 human subjects. We then determined which of the 21 were carriers of the bacteria Staphylococcus. After that, we recultured the subjects who had Staph and let the cultures grow. From there, we determined which human subjects were carriers of MRSA by swabbing parts of the staphylococcus and rubbing it onto different sections of a methicillin infused agar plate.</p> <p>Results One out of 21 subjects was MRSA positive.</p> <p>Conclusions/Discussion THROUGH EXPERIMENTATION, WE HAVE DISPROVED OUR HYPOTHESIS. ALTHOUGH WE PREDICTED THAT WE WOULD DISCOVER NO MRSA IN THE GENERAL POPULATION, IN ACTUALITY, ONE OUT OF TWENTY-ONE NON-HOSPITAL SUBJECTS TESTED POSITIVE FOR MRSA, A FIGURE THAT WOULD CORRELATE TO 4.76% OF THE GENERAL POPULATION. THESE RESULTS ARE QUITE SIGNIFICANT, FOR IT IS WIDELY HELD THAT MRSA IS PREVALENT IN HOSPITAL POPULATIONS, BUT IS NEARLY NONEXISTENT IN THE GENERAL POPULATION. OUR RESULTS CONTRADICT THIS WIDELY HELD ASSUMPTION AND SHED NEW LIGHT ON THE GROWING THREAT THAT ANTIBIOTIC- RESISTANT BACTERIA POSE. IN ADDITION, ALTHOUGH THE RANGE OF OUR TEST MAY NOT HAVE BEEN AS WIDE AS THOSE WE READ ABOUT IN OUR RESEARCH, OUR RESULTS ON THE NUMBER OF PEOPLE IN THE GENERAL POPULATION WHO CARRY STAPHYLOCOCCUS AUREUS VARIED SIGNIFICANTLY FROM THOSE WE READ ABOUT. ACCORDING TO OUR RESEARCH, ABOUT 20-30% OF THE GENERAL POPULATION ARE STAPHYLOCOCCUS AUREUS CARRIERS, BUT BASED ON OUR EXPERIMENT, ALMOST 45% OF THE GENERAL POPULATION ARE CARRIERS.</p>	
Summary Statement We determined the amount of MRSA carriers in the community- based population.	
Help Received Tracy Langenfeld of Memorial Hospital helped us in lab work.	