



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Maria J. Ly</b>	<b>Project Number</b> <b>S1316</b>
<b>Project Title</b> <b>Tracking Down Methicillin-Resistant Staphylococcus aureus</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project is analyze at my school the transmission rate of Methicillin-Resistant Staphylococcus Aureus if an outbreak occurred, and how to prevent such an outbreak. <b>Methods/Materials</b> To measure the transmission rate, a SIS model will be used, in which a transmission coefficient (based on the probability of contamination, hygiene and the transmission rate at hospitals) is required. The probability of contamination can be acquired through analysis of handwashing skills-UV lotion will be distributed to consenting subjects and UV lotion residues left on their hands on the day after distribution would show contamination(average surface area of a cut divided by average surface area of UV residue would yield the probability of contamination). Hygiene can be determined through the use of surveys. <b>Results</b> The SIS model yielded data showing that if such an epidemic occurred at my school, the transmission rate would be in a linear fashion, infecting about 5 people after a period of 14 days. <b>Conclusions/Discussion</b> Since a theoretical MRSA epidemic at my school would occur in a linear fashion, a plan has to be made to stop the epidemic from possibly becoming logarithmic in rate. Students MUST be taught (or re-taught) to wash their hands thoroughly and properly. MRSA awareness should be heightened as well, so that students would not dismiss their possible infection as a mere acne pimple.	
<b>Summary Statement</b> My project concerns calculating the transmission rate of a theoretical MRSA epidemic at my school, in order to help prevent or slow down such an epidemic.	
<b>Help Received</b> My mentor helped me think of the general idea of this experiment, revise my procedures to keep them accurate, showed me my mistakes, and helped me fix these mistakes.	