



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Christiana Y. Chen</b>	<b>Project Number</b> <b>J1305</b>
<b>Project Title</b> <b>The Distribution of Xylella fastidiosa Through a Grapevine</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project was to determine how a plant germ, Xylella fastidiosa, moves inside a grapevine. This bacterium grows inside grapevine, cuts off the water supply, and causes a deadly disease, called Pierce's disease. <b>Methods/Materials</b> First, I got a sick grape plant. I chose 4 leaves and collected them in a plastic bag. I labeled and took them to a microbiology lab. Under a cleanhood, I sterilized the surface of the leaf petioles with 10% Chlorox and rinsed them 3 times in sterile water. I sectioned the petiole, squeezed out the saps and cultured the bacterium in the saps in PW medium at 28 C. Six and ten days later, I went back to the lab and counted the bacteria. Two healthy grape leaves were used as control. <b>Results</b> Saps from most sick petiole sections showed the growth of bacteria. My dad confirmed them as X. fastidiosa. Different sections of the same petiole had different number of bacteria. No bacterial growth from healthy leaves. <b>Conclusions/Discussion</b> After recording my data, I observed that the number of bacteria from each section of the 4 petioles was very different. I concluded that the bacterium distributed in the grapevine unevenly, following the spreading process of moving, colonizing, moving, colonizing, and so on.	
<b>Summary Statement</b> Xylella fastidiosa distributes through a grapevine unevenly.	
<b>Help Received</b> Mom and Dad helped editing the poster. The USDA lab at Parlier, Ca, provided a microbiology lab and research materials. I was under the supervision of my Dad and his assistant, Rebecca Alvarez.	