



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> Meagan A. Armenta	<b>Project Number</b> <b>J2201</b>
<b>Project Title</b> Catchers Are Protected Behind Home Plate... or Are They?	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> my objective was to learn wether a smaller and less expensive chest protector protects a softball catcher's sternum equally the same as a larger and more expensive chest protector.</p> <p><b>Methods/Materials</b> I used nine pieces of plywood and nine pieces of drywall. A JUG pitching machine, fifty softballs, a Wilson Hinge Fx chest protector, an Easton Black Magic chest protector, and a TAG Battle Gear chest protector. A punching bag to simulate a thirteen year old girl's body. I tapped the piece of plywood to the punching bag and placed the chest protector over the wood. Then I shot softballs at the protectors from 12.2m away at 80.5kmph 50 times. Then I checked to see if there was any indentation. i did this same procedure for the dry wall. I tested this three times for each chest protector. I also passed out a questionairre to all of the coaches of Navajo Girls Fastpitch Softball League.</p> <p><b>Results</b> I found that the TAG Battle Gear (which was the smallest and least expensive chest protector) protected the catchers sternum euqally the same as the Wilson Hinge FX(which was the largest and most expensive chest protector. I found that the measurements of the indentaions were almost exact. These results supported my hypothesis. In my questionairre, I found that 73% of the caoches believed that a smaller and less expensive chest protector would not protect a catchers sternum equally the same as a larger and mor expensive chest protector, 24% belived that the smaller chest protector would protect a catchers sternum equally the same as a larger and more expensive chest protector, and 3% did not know.</p> <p><b>Conclussions/Discussion</b> After all my tests and all the results, my hypothesis was supported. This can help the consumers whom which buy this equiptment, afford this equiptment for an athlete at full protection at a reasonable price. This helps my understand this category.</p>	
<b>Summary Statement</b> In my project i wanted to find out wether an athlete is fully protected regardless of the expense.	
<b>Help Received</b> My father helped me with my graphs and with my procedure.	