



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Manu Vaish</b>	<b>Project Number</b> <b>S2213</b>
<b>Project Title</b> <b>The Effect of the Rhopalia on the Regeneration and Overall Health of Aurelia aurita: Year 2</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of my project was to determine whether the removal of the rhopalia, the sensory organ of the Aurelia Aurita, affects or even controls the organism's regeneration and overall health. The hypothesis of the project was that when a certain rhopalia was removed the jelly would cease to function properly. <b>Methods/Materials</b> In order to do this project, two adult medusas and six ephyra (baby jellyfish) were obtained. Then using a pair of fine knives and a microscope an incision was made to remove two adjacent rhopalia. Once the jelly or ephyra regenerated one or two of its original rhopalia, the next two were cut out. This process was repeated until the jelly exhibited awkward movement, no regeneration, and/or death. <b>Results</b> The results garnered from this experiment were that in all of the medusa jellies removal of the rhopalia resulted in either death or horrible regeneration. In all cases at least one of the rhopalia did not come back and the bell reformed all the way past the original point of cut. Also the medusa all exhibited a hoola hoop type of movement instead of a normal bell type of movement. The ephyra all died within the first cuts mostly; however, one ephyra managed to survive and regenerate all of its rhopalia. Also, two times out of six the ephyra lost the arms that the rhopalia were removed from. <b>Conclusions/Discussion</b> The conclusions drawn from this project are that removing a rhopalia definitely affects the organism. From the medusas it shows that the rhopalia may control the movement and regeneration of the jelly and in the ephyra the results show that the rhopalia may even control its growth and development. Whether there is one rhopalia or multiple rhopalia controlling the rhopalia is still up for question; however, in the end the rhopalia truly has a massive impact on the organism from ephyra to medusa stages.	
<b>Summary Statement</b> The project was done to determine whether the rhopalia, the sensory organ of the Aurelia Aurita, controls the jellyfish's regeneration and overall health.	
<b>Help Received</b> Dr. Kiersten Darrow, supplied the jellyfish and equipment.	