



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jill M. Jergens</b>	<b>Project Number</b> <b>S1111</b>
<b>Project Title</b> <b>The Manipulation of Scar Maturation</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this experiment was to discover if an IPL laser treatment could be used to increase the rate of maturation of a scar. Because of its uses in decreasing hyperpigmentation, it was hypothesized that the IPL could also be effective in decreasing the hyperpigmentation of scars. Considering the versatility of the machine's capabilities, its treatments could extend to surgery patients of any kind who wish to minimize the effects of scarring. <b>Methods/Materials</b> Three subjects were chosen for the experiment. Each subject is a middle aged female of Hispanic descent that underwent an abdominoplasty performed by the same doctor four months prior to experimentation. Each subject was photographed, using a digital camera, before receiving any treatment. Once a month, each subject received an IPL laser treatment on one half of the scar. The other half of the scar received no treatment. The same side of each scar was treated every time. The intensity level and specifications that are appropriate for the individual's skin type are programmed into the machine. Photographs are taken of the scar after all treatments are complete. <b>Results</b> It was concluded that the IPL treatment increased the rate of maturation. The scars treated with the IPL laser showed a reduction in hyperpigmentation. This shows that the IPL was effective in shrinking the dilated and broken blood vessels under the scar that cause it to appear red. <b>Conclusions/Discussion</b> The data supported the hypothesis, with the IPL laser treated halves of the scars producing more aesthetically pleasing results than the halves of the scars that did not receive this treatment. They were more aesthetically pleasing because of their reduction of redness and inflammation. The success of the IPL laser treatment was most likely due to its ability to treat dilated and broken blood vessels in the dermis layer of the skin that cause hyperpigmentation. This experiment could be improved by conducting a larger number of trials with more subjects, by quantifying the data using software technology to compare the amount of red color saturation in each photo or by taking measurements of the subjects' scars. This project could be expanded to testing other types of scar treatments such as topical creams.	
<b>Summary Statement</b> An IPL (Intense Pulsed Light) laser machine was used to determine if the rate of maturation of a postoperative patient's scar could be increased, compared to the rate of maturation during routine postoperative care.	
<b>Help Received</b> Used patients and equipment of Dr. Verbin. Dr. Verbin performed laser treatments.	