



**CALIFORNIA STATE SCIENCE FAIR  
2016 PROJECT SUMMARY**

<b>Name(s)</b> Zaid A. Khan	<b>Project Number</b>  36315
<b>Project Title</b> A Study of the UV Blocking Ability of UPF Rated Shirts	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this study is to test the integrity of these UPF rated shirts which claim to help prevent skin cancer, and block UV rays from penetrating the skin to a certain extent.</p> <p><b>Methods/Materials</b> Tested the quantity of UVA and UVB rays penetrating the shirt with UVA and UVB probes held up by a ringstand. Data from UVA and UVB probes was collected by a LabQuest2.</p> <p><b>Results</b> I tested the UPF rated shirts against standards set by the ASTM (american society for testing and materials) and they exceeded the standards. However, when i tested a regular cotton t-shirt it blocked exactly the same amount of UV rays as the UPF rated t-shirts, even though the UPF rated t-shirts were much more expensive.</p> <p><b>Conclusions/Discussion</b> My results show that the standards set for these UPF rated t-shirts are skewed because these shirts do no better than regular cotton t-shirts. This means that the companies manufacturing these t-shirts are essentially selling over-priced shirts while claiming that they prevent skin cancer and block out UV rays.</p>	
<b>Summary Statement</b> I tested shirts with an Ultraviolet Protection Factor Rating for their effectiveness in blocking UV rays, compared to what they claimed the shirts did.	
<b>Help Received</b> Riccardo Magni (mentor), The Summer Science Institute at Allan Hancock college, Dr.Murphy	