



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Edward J. Kronfli, III	Project Number J1212
Project Title Can Your Shirt Handle Your Sweat?	
Objectives/Goals My science fair project is on the subject of moisture management. I decided to do this project after noticing my friend's dad after a long run being drenched in sweat. His cotton shirt took a long time to dry. So, I decided to test various athletic shirts sold on the market today to see which is the best.	
Abstract Methods/Materials My test involved weighing a constant size rectangle of fabric from each shirt on an analytical scale. Then I dipped the end of that rectangle into distilled water and measured in centimeters how fast the fabric wicked water by how high the water climbed. Then I reweighed the wet rectangle and hung it to dry in the lab. As the fabric was drying, I weighed it every ten minutes and recorded all my data. The lab is temperature and moisture controlled. With this data, I calculated the weight of water absorbed and evaporated and its percentage of the residual weight of the wet fabric. I compared my data on a line graph and discovered that the fabrics that managed moisture best were made with microfiber polyester and not cotton. Also the lightest of the fabrics I tested, a white polyester mesh, was the quickest to absorb and the quickest to dry.	
Results My results showed that the polyester microfiber garment was the best in comparison to the other garments. Fleece cotton was the worst performing. It took a long time to dry. 100% polyester is best suited for moisture management. I also noticed that the mesh garments dried quicker yet did not absorb as much water where as the pure polyester microfiber absorbed more.	
Conclusions/Discussion Recently a new type of garment was developed, known as body mapping. This garment has a mesh in areas where the body sweats heavily and in areas of less moisture a microfiber polyester is used. That is the optimum solution.	
Summary Statement The project is about moisture management in textiles.	
Help Received Father assisted in testing and research. Used laboratory at Antex Knitting Mills.	