



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Alexander J. Faille	Project Number J0593
Project Title Swab, Swab, Is It Clean or Dirty?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project is to test surfaces to determine which surface is the most protein, sugar, and organic matter free.</p> <p>Methods/Materials There are three tests used in the process of this experiment. The tests are the Spotcheck-plus which tests for sugars, the Pro-clean which tests for proteins, and the final test is the Ultrasnap test which is a test for organic matter, and is measured in RLU's or radiant light units. To test a surface one must remove the detection swab from the plastic tube. After, simply swab the surface in a zigzag like motion. Put the plastic tube back on then break the snap valve at the top of the detection swab. If the test is the Spot-check plus or Pro-clean test then it will be a color test. On the Spot-check plus green means the surface is contaminated with sugars whereas if it is clear then the surface is sugar free. On the Pro-clean test green means there are no proteins and any color from clear to purple means there are proteins on the surface. The Ultrasnap after testing a surface, is put into the RLU reader which gives you an RLU reading. 50 or less is considered clean whereas any reading above 50 is contaminated.</p> <p>Results Ultimately, all of the surfaces were protein free except for inside the refrigerator. All of the surfaces were sugar free; nonetheless, all of the surfaces were contaminated with organic matter because they all had a reading over 50, actually the readings were all over 100. However, once the surface was cleaned they all seemed considerably clean and were no longer harmful with bacteria.</p> <p>Conclusions/Discussion The results did not support the hypothesis because the most contaminated surface which contained 407 RLU's and was contaminated with proteins was the inside of the refrigerator, and the least contaminated surface was the bathroom counter which contained 116 RLU's and was sugar free and protein free. RLU stands for radiant light unit which comes from luciferases which are what cause fireflies to glow, hence the name radiant light units, and there are multiple luciferase contained in the liquid above the snap valve; therefore, how many luciferase react with the organic matter molecules gives the RLU reading.</p>	
Summary Statement The experiment depicts which surface is truly the most sugar free, protein free, and organic matter free which involves three tests depicting the proteins, sugars, and organic matter on a surface.	
Help Received Dad helped retrieve tests from his work: Hygiena/MPC, and taught me how to use each test.	