



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

Name(s) Leia R. Gluckman	Project Number 38611
Project Title Empower Powder: Formulating a Body, Teeth, and Hair Cleansing Powder Made from Ingredients Available in a Refugee Camp	
Abstract Objectives/Goals The experiment tests the effectiveness of the formulation by testing for its effect in absorbing moisture (eg sweat), preventing odor, preventing bacterial growth, and for use as an insect repellent. Methods/Materials Bacterial culturing kits, incubator, mosquito netting, and various organic ingredients readily found near the Kakuma refugee camp in Kenya. Incubated culturing kits for 60 hours to test for anti-bacterial properties. Observed for insect attraction at dusk over several days. Results Multiple formulations were tested for the variables noted above. One was identified as the most effective across those variables and is being tested further to refine and enhance the effectiveness. Conclusions/Discussion The experiment supports the theory that locally available ingredients can be used to formulate a multi-purpose cleansing powder to enhance cleanliness without requiring water which is an increasingly scarce resource.	
Summary Statement I created a multi-purpose personal cleansing powder using ingredients found in an around the Kakuma Refugee camp so that it could be produced and distributed locally.	
Help Received I conceived the product myself and consulted with Pamela Stone of the American Red Cross, Allison Hurst of Safe Place for Youth and Chris from Heifer International.	