



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Kimberly J. Mitchell</b>	<b>Project Number</b> <b>J1013</b>
<b>Project Title</b> <b>The New Gassy World</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this experiment is to find out if the use of leftover fruits and vegetables from supermarkets used like feedstock in an anaerobic digester is a cheaper alternative to produce biogas in place of specialized energy crops at the same anaerobic conditions.</p> <p><b>Methods/Materials</b> To conduct this experiment, I had to build a biogas system and make samples for Predigester A and Predigester B. After that, I put slurry A into C, D, and E and slurry B into F, G, and H; put the digesters into temperatures 59F (C and F), 72F (D and G), and 100F (E and H) for 10 days, measuring biogas using water displacement and Syringe Protocol.</p> <p><b>Results</b> Slurry F produced more biogas than slurry C at 59F, slurry G produced more biogas than slurry d at 72F, and slurry E produced more biogas than slurry H at 100F. The most production of biogas produced was at 100F for slurry E and slurry H, but slurry H had the most production of biogas.</p> <p><b>Conclusions/Discussion</b> My hypothesis should be considered false because the feedstock of maize and sorghum produced more biogas than the feedstock of vegetables and fruit.</p>	
<b>Summary Statement</b> My project is about if the combination of unsold fruits and vegetables could produce more biogas than the combination of specialized energy crops, maize and sorghum.	
<b>Help Received</b> Father helped me with building the biogas system. Father and Mother supervised me for my safety.	