



## Centre for Bioprocess Engineering Research

University of Cape Town (UCT)

Cape Town, South Africa

[www.ceber.uct.ac.za](http://www.ceber.uct.ac.za)

<b>Title:</b>	Production of (Poly- $\gamma$ -Glutamic acid) PGA from candy waste using <i>Bacillus</i> sp
<b>Abstract:</b>	Poly- $\gamma$ -glutamic acid (PGA) is an anionic polypeptide biopolymer that has many attractive properties and industrial applications. It is non-toxic and can be used as a soil conditioner, hydrogel and a biocoagulant. It is produced by many <i>Bacillus</i> species that are ubiquitous in nature. These organisms are able to use a variety of carbon sources. In this project <i>Bacillus</i> species were isolated from the Mitchell's Plains Waste Water Treatment plant and were grown in dilute media containing compounds similar to those found in domestic wastewater and the most promising isolates were used for further experiments. Candy waste as a carbon source will be used for the production of PGA in a 5 litre batch bioreactor.
<b>Lead institution:</b>	University of Cape Town
<b>Partner institutions:</b>	Cape Peninsula University of Technology
<b>Student name:</b>	Sharon Rademeyer
<b>Supervisor name:</b>	Prof Sue Harrison, Dr. Madelyn Johnstone-Robertson, Prof Marshall Sheldon
<b>Degree:</b>	MEng
<b>Funded by:</b>	CeBER
<b>Start date:</b>	February 2016
<b>End date:</b>	December 2017
<b>Feedstock:</b>	The carbon source will be candy waste.
<b>Value chain products:</b>	Poly- $\gamma$ -Glutamic acid
<b>Geographic source of the feedstock:</b>	KZN