



<b>Name:</b>	Kelly Westmacott		
<b>Project title:</b>	PhD: Development of novel technology for boar taint detection to assist with the production of taint-free pork		
<b>Institute:</b>	University of the West of England, Bristol		
<b>Start date:</b>	April 2014	<b>Finish date:</b>	March 2018
<b>Lay summary of project</b>			
<p>Boar taint is an unpleasant odour or taste that is found in 5-10 % of the meat from uncastrated male pigs. It is attributed to the excessive accumulation of several natural compounds which are linked to diet and sexual maturity. Surgical castration can help to prevent the compound accumulation, however the UK no longer routinely surgically castrate boars. Early slaughter has instead been adopted to help reduce tainted meat reaching the consumer but this doesn't always work, and lower weights result in reduced profits.</p> <p>My project aims to characterise a device which can measure the level of boar taint in the fat tissue of pigs. The device will be able to simultaneously detect boar taint compounds, and give user-friendly read outs. The results will be produced rapidly to allow for the carcass to be sorted correctly before reaching the end of the abattoir line.</p> <p>This device will therefore aid the prevention of tainted prime meat cuts reaching the consumer; tainted meat can therefore be sorted into other processed meat products where the taint flavour would be undetectable.</p> <p>The device will also be able to aid research into other boar taint prevention methods such as genetic selection, vaccination, dietary manipulation, and any other potential strategies.</p> <p>Currently there is no on-line method to rapidly determine boar taint in carcasses. The current 'gold standard' method to accurately determine the offending compounds is High Resolution Gas Chromatography. This method is lab based which requires sample preparation and is time consuming and costly. Whereas our novel technology will be portable, preparation-free, rapid and cost effective. Making it easy to use in all aspects of research strategies and end-product sorting.</p> <p>Ultimately our device will help to improve customer satisfaction of the pork industry and increase competitiveness of the UK pig industry.</p>			
<b>A bit about yourself</b>			
<p>I received my First Class Bachelor's Degree in Forensic Science from the University of the West of England (UWE), Bristol (2012). I specialised in the analytical sciences and my dissertation was based on the optimisation of a similar type of technology for drug detection. I was awarded the 2012 Royal Society of Chemistry Bristol prize for my excellent achievements in the Advanced Analytical Science module.</p>			



### **What you hope to get out of your PhD**

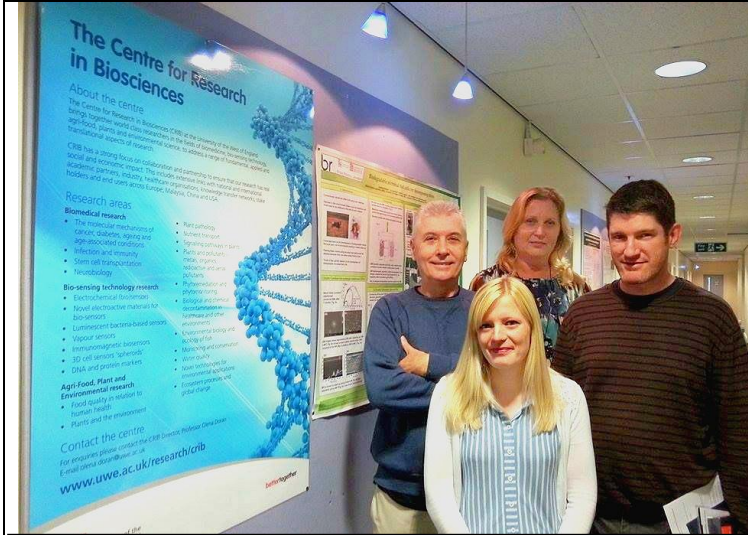
This Ph.D. is a multidisciplinary project which requires me to develop an in-depth understanding in various analytical techniques and fabrication methods. The UWE Ph.D. programme has a large emphasis on personal skill building for the student; I will present my research at scientific conferences both in the United Kingdom and internationally. My project has been designed to allow for national and international collaboration via industrial placements; this will allow me to gain a better understanding of the pig industry both inside and outside of the United Kingdom.

The agriculture industry is continuing to expand due to the fast growth of our population in the United Kingdom and across the world. This industry, therefore, needs to improve its technology through research to be able to meet with these increasing demands. I can see a real future for myself in this industry; I would like to develop and sustain links between the pig industry and universities across the United Kingdom and internationally via the development of research programmes addressing current pig industry challenges.

### **A photograph of your work**



Gas Chromatograph Instrument (Comparative technique)



Kelly Westmacott (front) and her supervisory team (from left to right) Prof. John Hart, Prof. Olena Doran, and Dr. Adrian Crew.

Declaration: I hereby give permission for my photo and the information provided to be used by BPEX in any publication, printed or electronic, for the purpose of informing stakeholders about my work.

Signature: ..... *K Westmacott* .....

Date: ..... *08/10/14* .....