

2014 YCCSA SUMMER SCHOLARSHIP PROJECT SUBMISSION

This form is for prospective project supervisors to submit their projects to be included in the YCCSA Summer Scholarships Programme for 2014.

It is the purpose of the Summer School that any projects submitted are interdisciplinary in nature.

Date	5 th February 2014
Main Supervisor's Name	Professor Philip Ineson
Main Supervisor's Department	Biology
Co-supervisors' name(s) and Departments	Dr Andrew Pomfrett, Electronics
Project Title	Automation of greenhouse gas measurements
Project Description	<p>Climate change is one of the major issues facing mankind in the 21st Century with the ever-increasing production of "greenhouse gases" as a consequence of human activities. There is a particular urgent need to understand, quantify and control the sources and sinks of these gases from agricultural and natural ecosystems where data are frequently lacking because of the traditional, labour intensive nature of taking the measurements. Recent collaboration between the Biology and Electronics Departments has resulted in the first 3D automated field system (SkyGas) capable of measuring the release/uptake of major greenhouse gases from agricultural crops and natural vegetation. The system brings the strengths of control system expertise in the Electronics Department to the solution of monitoring complex field systems; the basic system has been built and now requires testing and improving, with regard to the computer-driven user interface and long-term reliable field operation.</p> <p>The student will be responsible for using and monitoring this newly-developed system, identifying problems and potential improvements, with the aim of helping to make the equipment as reliable and user-friendly as possible for future operators.</p>
Required skills	The ideal summer student would have an unusual combination of skills, with a basic knowledge of working with computer/electronic/complex systems, whilst also being prepared to operate software-controlled equipment under outdoor field conditions. Ideally, the student will have an interest in working outdoors and be prepared to tackle diverse tasks ranging from monitoring plants and maintaining field equipment, through to modifying complex control systems.
Project dates	Monday, 14 July 2014 to Friday, 12 September 2014.
Other information	There is a short description and video of the SkyGas equipment at http://www.york.ac.uk/yesi/projects/skygas/
References	<u>Heinemeyer, A ; Gornall, J ; Baxter, R ; Huntley, B & Ineson P (2013)</u> Evaluating the carbon balance estimate from an automated ground-level flux chamber system in artificial grass mesocosms. <i>Ecology & Evolution</i> , 3: 4998-5010.

When complete, please email the form to sarah.christmas@york.ac.uk