2017 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 2017.

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

Date	*06th January 2016*
Supervisors' Names and Departments / Affiliation and Contact Email	*James Stockdale The York Management School james.stockdale@n8agrifood.ac.uk* *Stuart Priest Department of Biology stuart.priest@york.ac.uk* *Sylvia Toet Environment Department sylvia.toet@york.ac.uk* *Steve Howarth Department of Biology steve.howarth@york.ac.uk* *Phil Ineson Department of Biology phil.ineson@york.ac.uk*
Project Title	*SkyLine2D: bridging the gap between user requirements and an integrated control of a novel technology*
Project Description	*A recent market assessment exercise has shown that a newly-developed autonomous environmental research tool, SkyLine2D, has the potential to become a successful commercial product. However, in order to realise this opportunity, substantial business and technical research is required to develop the tool to satisfy the varied, complex, and potentially unknown, customer requirements. Funding has been secured for (i) the technical development of SkyLine2D, including the inclusion of a wide range of on-board environmental sensors (specifically greenhouse gas analysers); and (ii) the commercial development of SkyLine2D, such as component supply chain redundancy, product certification, and IP protection. However, a separate area of research is bridging the gap between user requirements for communicating with and controlling SkyLine2D in varied environmental conditions, with a fully integrated control system for the system and any on-board sensors.* *The aim of this challenge-led research project is to use our currently engaged group of potential users to assess the current control system, identify customer priorities and construct a novel user-orientated interface which fully integrates with SkyLine2D. It is likely that part of the project will involve creating an app to control the equipment and, if required, initial training will be provided to ensure the successful student is up to speed in app development (Android and Apple). Whilst meeting these software development challenges, the project will also aim to integrate the user interface all with other on-board components manufactured by our industrial collaborators, Delta-T Devices Ltd and Analytical Development Company Ltd. This project will work alongside a NERC funded project, giving the student an opportunity to work closely with mechanical and electrical engineers in the Biology Workshops during the planned technical development of SkyLine2D, in addition to engaging with the development of a new University spin-out company.*
Required Skills	*The project would generally suit a student with a keen interest in human-interface*

	programming together with a wider interest in the translation of novel research into industry. Specific skills in at least one programming language is an essential requirement. Knowledge of Linux, Java and/or php would also be advantageous.
Supervision and Collaboration Arrangements	*Dr Stockdale will have overall responsibility for the student throughout the project and assist the project during the user-group engagement process. Prof Ineson, the originator of the SkyLine2D concept, will also work in an advisory and mentoring role throughout. Mr Priest and Mr Howarth will jointly provide training, as required, for app development and supervision for other interface development. Dr Toet will provide supervision, specific application expertise and contribution to the testing of the software throughout the development process.*
Project Dates	*The project will run for 9 weeks, starting on Monday, 10 July 2017 and finishing on Friday, 8 September 2017.*
Other Information	*The development of SkyLine2D is the result of an ongoing multi-disciplinary collaboration at York, however this project will enable the inclusion of computer systems management expertise to further develop the capabilities of this technology in a targeted manner.*
References	*Keane, J. B. and Ineson, P.: Technical Note: Differences in the diurnal pattern of soil respiration under adjacent Miscanthus x giganteus and barley crops reveal potential flaws in accepted sampling strategies, Biogeosciences Discuss., doi:10.5194/bg-2016-397, in review, 2016.*

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