

An update

Studentships and Prizes

AT CRANFIELD UNIVERSITY

The graduation ceremony at Cranfield University held on Friday 26th June saw several students who have been supported by The Trust receive their degrees as follows:

- **Joanna Niziolowski** - received her PhD for her project work on 'Optimising soil disturbance and mulch attenuation for erosion and runoff control in asparagus

crops'. Joanna also received the Shepperson Memorial prize for the best thesis applying engineering applications to agriculture.

- **Raed Al-Asadi** - received his PhD for his project work on 'Combined impedance and visible and near infrared spectroscopy techniques for non-invasive in situ measurement of soil compaction'.
- **James Ulyett** - received his PhD for his

project work on 'Engineering biochar for arable soils and the impact on nutrient dynamics'

- **Matthew Downie** - did not attend the ceremony but was awarded an MSc by Research for his work on the measurement of multiple trace gas emissions from environmental systems using the soil lysimeters at Cranfield University.

Travel Awards

The Douglas Bomford Trust jointly funded a team of four students to travel to the University of Maribor in Slovenia to take part in the Field Robot Event 2015. Participation in the event involved:

- Designing and testing a robot at the University prior to travelling to the event;
- Getting the robot to complete four tasks as part of the competition -
- **Task 1 - Basic Navigation** - involved progressing through a row crop, travelling down the rows and completing turns into the next row at the end of a row;
- **Task 2 - Advanced Navigation** - involved following a more complex path through the crop rows and taking account of missing plants in the row;
- **Task 3 - Weed detection** - to detect 'good' and 'dried' plants and produce a map of the plant area;
- **Task 4** - a 'Freestyle' section where teams could demonstrate a feature of their own choosing.

An important aim of the project was to create a platform for future groups at Harper Adams University as well as compete in the 2015 event.

The group consisted of four final year Masters Students with two studying Agricultural Engineering and two studying Off Road Vehicle Design. The group had little robotics and programming experience before starting this project and ideally wanted to keep the robot as simple as possible.

The final robot consisted of an adapted Maverick Scout RC chassis, an



The team from Harper Adams (Alec Henderson, Jake Smith, Max Thorne and James Townley) competing at the Field Robot Event 2015 in Slovenia

Arduino Mega as the controller, two LED diffuse scanners and four Ultrasonic sensors for the navigation of the robot. The selection of these sensors proved to be successful allowing a Double Ended Control Strategy (DECS), to be implemented. At the event, a total of 18 teams from



9 countries competed with the team from Harper Adams coming second in Task 2, first in Task 1 and in third place overall.

- **Agnese Mancini** - received her MSc by Research in Land Reclamation and Restoration: Agnese is currently working towards a PhD concerned with cover crops for erosion and runoff control in forage maize with support from The Trust.

The Douglas Bomford Trust award for the best student on the Land Reclamation and Restoration course was presented to Danielle Whitlock.



Danielle Whitlock receiving the DBT Award from Trust secretary Paul Miller at the Graduation Prize Winners ceremony at Cranfield University.

AT THE ROYAL AGRICULTURAL UNIVERSITY

The Douglas Bomford Trust prize at The Royal Agricultural University is awarded for the best student project that links the application of engineering principles to agricultural applications.

This year the award was presented to Destiny Bradley for project work concerned with the automated monitoring of sheep using tri-axial accelerometers.

Destiny also won an award that gave her the opportunity to go to the Alltech Rebellion in Kentucky, USA in May and this she was able to do using her prize (a ticket for two that she shared with a fellow student and a contribution to travel and accommodation costs) together with a

top-up travel grant from The Trust. A report of her trip is expected shortly.



Destiny Bradley at The Royal Agricultural University with Paul Miller, having received The Douglas Bomford prize

The effect of ground pressure on soil properties and crop development for 3 tillage systems

This research studentship in the Crop and Environmental Sciences and Engineering Departments at Harper Adams University, in conjunction with the University of Illinois at Urbana - Champaign, USA, is now open for applications.

The Michelin Tyre Company Ltd funds this project for a period of 3.5 years. The Director of Studies is Dr Paula Misiewicz, in conjunction with David White, Dr Ed Dickin and Professor Richard Godwin (Harper Adams University) and Dr Tony Griff of the University of Illinois, USA, where (after initial 3 - 6 months training at Harper Adams University, UK) the field studies will be conducted. It is anticipated that the final thesis preparation stage will be conducted at Harper Adams University (3 - 6 months).

Applications should be made through the Harper Adams University website: <https://jobs.harper-adams.ac.uk/> where further details of the project can be found. The studentship will start on 28 September 2015, with the exact starting date to be negotiated at interview. Interviews will take place at HAU for shortlisted UK applicants, and by Skype for shortlisted applicants from the USA and other countries.

Further information can be found on the HAU website at www.harper-adams.ac.uk and on the research training provided and PhD progression requirements in the Postgraduate Research Students Handbook at:

<http://www.harper-adams.ac.uk/research/files/MPhil-PhD-Handbook.pdf>

For informal enquiries on general aspects of research degrees at HAU, applicants may contact Mrs Viv Slann, Research Students Administrator (vslann@harper-adams.ac.uk). For informal enquiries on the project, applicants may contact the Director of Studies named above through the staff directory: <http://www.harper-adams.ac.uk/staff/photo-directory.cfm>

The studentship includes tuition and bench fees and a personal stipend of £16,456 (\$25,342); this is indicative and will be dependent upon the exchange rate at the time) rising with annual increments and including fringe benefits (US Health insurance). Applicants will normally be expected to hold a bachelor's degree with a first or upper second class or a high GPA in an appropriate subject and ideally a relevant masters degree, such as agricultural engineering/mechanisation, soil and/or crop sciences, and agronomy/agriculture.

A minimum level of competency in English is required. International applicants need to be classed as an overall IELTS grade 6.0 with a minimum of 5.5 in each component. Please see the University's web site at

<http://www.harper-adams.ac.uk/international/english-language.cfm> for English Language requirements.



Harper Adams
University

REFERENCE -
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