Roots of the second green revolution

Thursday 23rd April 2015, Lecture Theatre LT2, Dalhousie Building, University of Dundee.

Incorporating the 2015 ISRR Medal Lecture on Root Research .

http://www.eventbrite.com/e/roots-of-the-second-green-revolution-tickets-16199019704

13:00 Registration and tea/coffee

13:25 Welcome to meeting

Young Researcher Talks

13:30 Caroline Upton James Hutton Institute and University of Abertay, Dundee.

"Seeing in the dark: shedding new light on root system architecture"

13:45 Sam Keyes, University of Southampton

"Imaging at the interface: interdisciplinary investigations of soil root interactions."

14:00 Mohammad Sayedul Islam, University of Aberdeen

"High throughput method to assess rooting depth in rice using buried herbicide"

14:15 Dimitris Kalogiros, James Hutton Institute and University of Dundee

"Measuring root growth traits from phenotyping images using a density-based model"

14:30 Quick poster outlines (listed overleaf – 1 slide only in 2 minutes)

14:50 Poster Session in Foyer (details listed overleaf), accompanied by afternoon tea/coffee

16:00 Inaugural ISRR Dundee Medal Lecture in Root Research: *The ISRR Medal Lecture on Root Research is an annual event held in Dundee in late spring or early summer. The Medal Lecture Organising Committee comprises Glyn Bengough (current Chair), Tim George, Blair McKenzie, Philip White, and Paul Hallett.*

"Roots of the second green revolution" by Professor Jonathan Lynch

Sustaining 10 billion people in a degrading environment is a grand challenge of the 21st century. The development of agricultural systems that are more resilient and require fewer inputs will be a cornerstone of addressing this challenge. This presentation will review progress in developing crops with greater drought tolerance and nutrient efficiency by selection of superior root phenotypes.

17:10 Medal presentation and photographs

17:15 Drinks reception, Dalhousie Foyer

18:15 Close and depart

Acknowledgements: Thanks to the Scottish Food Security Alliance and the James Hutton Institute Medal Lecture fund for sponsoring this meeting. Thanks to Drs Jen Brown and Ken Loades for help with meeting organisation and projection respectively.

List of Posters (* indicates that a quick poster outline will be presented in the lecture theatre)

1. Deciphering the cross-talk between host genotype, microbiota structure, and plant growth in barley.*
   Rodrigo Alegria Terrazas[1], Katharin Balbirnie[1], Eric Paterson[3], Elizabeth Baggs[2] and Davide Bulgarelli[1]
   [1]Division of Plant Sciences, University of Dundee; [2] School of Biological Sciences, University of Aberdeen; [3]The James Hutton Institute, Aberdeen.
2. Genotypic variation of root traits in barley Recombinant Chromosome Substitution Lines with contrasting response to drought.*
   Carla de la Fuente Cantó[1], Dimitris Kalogiros[1,2], Timothy S George[1], Joanne Russell[1], Lionel Dupuy[1], A. Glyn Bengough[1,2] and Robbie Waugh[1,2]
   [1] The James Hutton Institute, Invergowrie, DD2 5DA, Dundee, UK; [2] University of Dundee, DD1 4HN, Dundee, UK.
3. Seismic performance of rooted slopes.*
   Teng Liang[1], **Jonathan Knappett**[1] and Glyn Bengough[1,2]
   [1]University of Dundee, DD1 4HN, Dundee, UK, [2]The James Hutton Institute, Invergowrie, DD2 5DA, Dundee, UK.
4. New methods for in situ measurement of root-reinforced soil strength.*
   Gerrit J. (Gertjan) Meijer [1,2,3], A. Glyn Bengough[1,3], Jonathan A. Knappett[1], Kenneth W. Loades[3] and Bruce C. Nicoll[2]
   [1]Division of Civil Engineering, University of Dundee, Dundee DD1 4HN, [2]Forest Research, Roslin, Midlothian EH25 9SY, [3]The James Hutton Institute, Invergowrie, Dundee DD2 5DA.
5. How does pH influence soil's physical structure and properties.*
   Anastasia Fountouli[1,2], Graeme I. Paton[1], Christine A. Watson[2], Robin L. Walker[2], Paul D. Hallett[1]
   [1]School of Biological and Environmental Sciences, University of Aberdeen, Aberdeen, UK; [2]Crop & Soils Systems, SRUC Aberdeen Campus, Craibstone Estate, Aberdeen AB21 9YA.
6. Exploiting root exudation of organic acids and phytases to enhance plant utilisation of soil phosphorus.
   Courtney D. Giles[1], Daniel Menezes-Blackburn[2], Timothy S. George[1], Charles Shand[1], David Lumsdon[1], Pat Cooper[1], Renate Wendler[1], Michael Adu[1], Lawrie Brown[1], Marc Stutter[1], Martin Blackwell[3], Catherine Wearing[2], Hao Zhang[2] Philip M. Haygarth[2].
   [1] The James Hutton Institute, Aberdeen, AB15 8QH and Dundee, DD2 5DA, Scotland, UK. [2] Lancaster University: Lancaster Environment Centre, Lancaster, LA1 4YQ, UK. [3] Rothamsted Research: North Wyke, Okehampton, Devon, EX20 2SB, UK.
7. Rhizogenesis: Exploring the physical development of the emerging root: soil interface.
   Jonathan Helliwell[1], Sacha Mooney[1], Anthony Millar[2], Richard Whalley[3], **Craig Sturrock**[1]
   [1]University of Nottingham, United Kingdom, [2]John Innes Centre, United Kingdom, [3]Rothamsted Research, United Kingdom.
8. Effects of water potential on root water content and diameter: A pilot study.
   David Boldrin[1, 2], Anthony Leung[2] and A. Glyn Bengough[1, 2]
   [1] The James Hutton Institute, Invergowrie, DD2 5DA, Dundee, UK; [2] Division of Civil Engineering, University of Dundee, DD1 4HN, Dundee, UK.
9. Binding Boletes and water repellent Webcaps: forest soil modification by ectomycorrhizal fungi.
   Mike R Ogden, Paul D Hallett, David Johnson
   School of Biological and Environmental Sciences, University of Aberdeen, Aberdeen, UK
10. Root exudates can control soil N dynamics.
    Tim Daniell[1], **Adrian Langarica Fuentes**[1], Susan Mitchell[1], Marta Manrubia Freixa[1,2]
    [1]The James Hutton Institute, United Kingdom, [2]Netherlands Institute of Ecology (NIOO-KNAW), Netherlands.