

1st RSC BMCS Agriscience Chemical Biology Postgraduate Symposium
Imperial College, London
1st-2nd November 2012



There has been an increased awareness and focus upon agriscience related research within UK academic institutions over the past few years. The first Agriscience Chemical Biology Postgraduate Symposium provided an opportunity for postgraduate and postdoctoral researchers in this field to learn more about the exciting research going on in the area and to network with their peers as well as with industrialists and academics. The meeting was organised by the Biological and Medicinal Chemistry Sector (BMCS) of the RSC and the Imperial College AGRI-net and was held at Imperial College, London on the first and second of November 2012. Support was also provided by the Biochemical Society, the Chemical Biology Interface Division (CBID) of the RSC, Bayer CropScience and Syngenta.

The focus of the symposium was current chemical biology research in areas related to agriculture and the agrisciences. In the context of the meeting, chemical biology was defined as the application of physical science-based tools and technologies (in chemistry, physics, mathematics and engineering) to tackle biological problems on a molecular level within the agrisciences. This conference brought together PhD and postdoctoral students from all of these different research communities to showcase the current state of fungal, insect and plant chemical biology achievements within a spirit of multidisciplinary interaction and engagement.

The symposium consisted of nine postgraduate presentations, plus two academic plenary speakers and an industrial talk highlighting research and potential career opportunities in industry. In addition, there were seventeen poster presentations which were supported by short two minute long oral flash presentations. In order to encourage student attendance, registration for the Symposium was free and a free conference dinner was held at a local restaurant to encourage networking. The meeting was attended by fifty four scientists whose feedback to an online questionnaire has been overwhelmingly positive.

Four prizes were awarded for the best oral and poster presentations at the meeting:

Oral Presentation - First Prize: Hannah Straker, Durham University, "Chemical Tools for Investigating Multiple Herbicide Resistance in Black Grass: Design and Synthesis of Novel Synergists".

Oral Presentation - Runners up Prize: Sam Gorny, Rothamsted Research Institute, "Cysteine Proteinases: Nematodes Nemesi?"

Poster presentation - First Prize: Kerry O'Donnelly, Imperial College London, "Increasing the Efficiency of Rubisco - The Capture and Release of CO₂ by Carbonic Anhydrase Mimics".

Poster presentation - Runners Up Prize: Charlotte Wendelboe-Nelson, Heriot-Watt University, "A Proteomic Analysis of Drought Stress in Barley".

A summary of the event with pictures has been posted on the Agri-net internet site: <http://www.agri-net.net/news/agri-science-chemical-biology-postgraduate-symposium>



Congratulations to all of the winners of the 1st Agriscience Chemical Biology Postgraduate Symposium. Shown left to right: Charlotte Wendelboe-Nelson, Kerry O'Donnelly and Hannah Straker.

1st RSC BMCS Agriscience Chemical Biology Symposium 2012: Programme

Location: The Council Room, 170 Queens Gate, Imperial College, London

Thursday 1st November

12:30-1:00 **Registration** Tea, coffee & light refreshments

1:00-1:15 **Welcome: Dr. Laura Barter, Imperial College, London**
Welcome, opening remarks & house-keeping announcements

Session I Chair: Dr. Rudiger Woscholski, Imperial College, London

1:15-2:00 Plenary lecture: Prof. Patrick Steel, Durham University
"Exploring the molecular basis of safener action"

2:00-2:25 Sam Gorny, Rothamsted Research
"Cysteine Proteinases: Nematodes Nemesis?"

2:25-2:50 Dr. Angel Medina, Cranfield University
"Fungal ecophysiology made easier: Using the Lambert-Pearson model to evaluate the effect of environmental factors on fungal early sporulation and growth"

2:50-3:20 Tea, coffee & light refreshments

Session II Chair: Prof. Kim Hammond-Kosack, Rothamsted Research

3:20-3:45 Hannah Straker, Durham University
“Chemical Tools for Investigating Multiple Herbicide Resistance in Black Grass: Design and Synthesis of Novel Synergists”

3:45-4:10 Jens Maintz, MPIPZ Cologne
“Chemical Genetic Analysis of PAMP-triggered Calcium Signatures”

4:10-4:50 Student Flash Presentations prior to poster session (17 x 2 minutes)

4:50-5:00 Group photograph

4:50-7:00 **Poster session** Drinks reception (Solar Room, 170 Queens Gate)

7:30 **Conference Dinner** Med Kitchen, South Kensington

Friday 2nd November

8:30-9:00 Tea, coffee & light refreshments

9:00-9:05 **Welcome: Dr. Laura Barter, Imperial College, London**
Welcome & house-keeping announcements

Session III Chair: Dr. Stuart Dunbar, Syngenta

9:05-9:35 Plenary lecture: Dr. Anthony Flemming, Syngenta
“Identifying pesticide targets: Chemical genetics in the nematode *Caenorhabditis elegans*”

9:35-10:00 Antoine Delmotte, Imperial College
“Uncovering the dynamical behaviour of Rubisco at all scales and throughout the carboxylation reaction using graph partitioning”

10:00-10:25 Robert Jackson, Rothamsted Research
“Using chemical biology to dissect plant hormone signalling in *Arabidopsis*”

10:25-10:50 Ellis O'Neill, John Innes Centre
“Towards the in vitro generation of a starch granule: developing tools for studying starch metabolism”

10:50-11:15 Tea, coffee & light refreshments

Session IV Chair: Dr. Stephen Lindell, Bayer CropScience

11:15-11:40 Laura Erdmanis, Birkbeck College
“Investigating the molecular determinants of neonicotinoid selectivity at insect and tick nicotinic acetylcholine receptors”

11:40-12:05 Dr. Bob Vaughan, Syngenta
“Connecting Biology and Chemistry in Ondex”

12:05-12:45 Plenary lecture: Ed Tate, Imperial College, London
“Exploring emergent properties of living systems using chemical biology”

12:45-1:00 Dr. Stephen Lindell, Bayer CropScience
Concluding remarks and award of prizes (sponsored by the RSC CBID)
£200 for the best talk and £100 for the runner up
£125 for the best poster and £75 for the runner up

With thanks to Syngenta, RSC Biological & Medicinal Chemistry Sector, AGRI-net, Bayer CropScience, RSC Chemical Biology Interface Division and the Biochemical Society for their generous support of the Symposium