

# ICAR 2009 Programme

**Tuesday 30 June 2009**

**14:00 – 19:00**      **ICAR 2009 Registration**  
*Location Strathblane Hall*

**16:00 – 17:30**      **Workshops**

**1. Plant Proteomics - breakthroughs in studying intra-cellular dynamics and environmental response in the Arabidopsis proteome**

*Location Tinto*

**2. Assaying for hallmark features of Programmed Cell Death**

*Location Moorfoot*

**15:45 – 17:30**      **3. Quantitative Modelling of Signalling Systems**  
*Location Kilsyth*

**17:30 – 19:00**      **Opening Ceremony and Keynote Lectures**  
*Location Pentland Auditorium*

**Prof Andrew Millar** – University of Edinburgh  
Welcome

**Prof. David Baulcombe FRS** - University of Cambridge  
Title to be confirmed

**Prof. Wayne Powell** - IBERS, University of Aberystwyth  
Title to be confirmed

**19:00 – 21:00**      **Welcome Drinks Reception**  
*Location Strathblane and Cromdale Halls*

# ICAR 2009 Programme

**Wednesday 1<sup>st</sup> July 2009**

**08:30 – 18:00 ICAR 2009 Registration**

*Location Strathblane Hall*

## **09:00 - 10:30 Session 1: The RNA World – Epigenetics and Genomics**

Co-Chairs :- David Baulcombe and Marjori Matzke

*Location Pentland Auditorium*

**09:00 – 09:30 Prof. Jian Kang Zhu** - University of California, Riverside, USA  
Mechanism and function of active DNA demethylation

**09:30- 10:00 Prof. Jurek Paszowski** - University of Geneva, Switzerland  
DNA methylation and transgenerational epigenetic inheritance

**10:00 – 10:30 Prof. Herve Vaucheret** - INRA Centre de Versailles, France  
Specificity, redundancy and antagonism among plant small RNA pathways

*This session is kindly sponsored by Roche*

**10:30 – 11:00** Refreshment Break, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*

## **11:00- 12: 30 Session 2: Development**

Co-Chairs Keith Lindsey and Vivian Irish

*Location Pentland Auditorium*

**11:00 – 11:30 Dr. Xuemei Chen** - University of California – Riverside, USA  
Regulation of floral stem cells

**11:30 – 12:00 Prof. Ben Scheres** - Utrecht University, The Netherlands  
Architecture from stem cell centred feedback networks

**12:00 – 12:30 Prof. John Bowman** - Monash University, Australia  
Evolution of patterning genes in land plants

*This session is kindly sponsored NAASC*

**12:30 – 14:00** Lunch, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*  
*Lunch is kindly sponsored by Bayer*

## **14:00 – 15:30 Concurrent Session A: Hot Topics**

Co-Chairs:- Ottoline Leyser and Philip Benfey

*Location Pentland Auditorium*

**14:00 - 14:15 Dr. Stig Uggerhøj Andersen** - MPI, Tuebingen, Germany  
Next-generation genetics: mapping and mutant identification in one step by deep sequencing

**14:15 - 14:30 Dr. Rebecca A. Mosher** – University of Cambridge, UK

Uniparental expression of PolIV-dependent siRNAs in developing endosperm of Arabidopsis

- 14:30 - 14:45**      **Prof. Ian Small** - University of Western Australia, Australia  
Roles for RNA editing factors in leaf development
- 14:45 – 15:00**      **Alexander Graf** – John Innes Centre, Norwich, UK  
The circadian clock controls carbohydrate metabolism and hence growth rate in Arabidopsis plants at night
- 15:00 – 15:15**      **Renhou Wang** - Max Planck Institute, Cologne, Germany  
Control of perennial flowering and perenniality in *Arabidopsis alpina*
- 15:15 - 15:30**      **Dr. Kirsten Bomblies** - MPI, Tuebingen, Germany  
Local-scale population structure and outcrossing in *Arabidopsis thaliana*

*This session is kindly sponsored the Plant Journal*

### **14:00 – 15:35 Concurrent Session B: Environmental Responses**

Co-Chairs :- Steven Penfield and Paloma Más

*Location Sidlaw Auditorium*

- 14:00 – 14:25**      **Dr. Paul Devlin** - Royal Holloway – University of London, UK  
FHY3 and FAR1 mediate red light input to the Arabidopsis circadian clock
- 14:25 – 14:50**      **Prof. Julian Schroeder** -University of California, Davis, USA  
Identification of CO<sub>2</sub>-binding proteins that function as upstream mediators of CO<sub>2</sub>-induced stomatal movements
- 14:50 – 15:05**      **Dr. Harriet McWatters** - University of Oxford, UK  
Membranes, temperature and the plant clock
- 15:05 – 15:20**      **Dr. Jose Dinneny** - National University of Singapore  
Towards a spatiotemporal understanding of the salt stress response
- 15:20 – 15:35**      **Dr. Motoaki Seki** - RIKEN PSC, Japan/Yokohama City University, Japan  
Novel RNA- and chromatin remodeling-mediated regulatory mechanisms in plant abiotic stress responses

*This session is kindly sponsored the Plant Cell and Environment*

- 15:30 – 14:00**      Refreshment Break, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*

### **16:00 – 18:00 Concurrent Session C: Novel Tools and Resources**

Co-Chairs :- Sean May and Blake Meyers

*Location Pentland Auditorium*

- 16:00 – 16:30**      **Prof. Joe Ecker** - Salk Institute, USA  
Sequencing Across the Genome-Phenome Divide
- 16:30 – 17:00**      **Dr. Sean Cutler** – University of California, Riverside, USA  
Sidestepping Genetic Redundancy with Small Molecules
- 17:00 – 17:15**      **Dr. Anna Amtmann** – University of Glasgow, UK  
EZ-Rhizo: New Software for Fast and Accurate Measurement of Root System Architecture
- 17:15 – 17:30**      **Dr. Jun Cao** - Max Planck Institute, Tuebingen, Germany  
One genome is not enough: Genome-species genome variation in *Arabidopsis thaliana*
- 17:30 – 17:45**      **Dr. Neil Graham** - University of Nottingham, UK  
Evidence of neutral transcriptome evolution in plants
- 17:45 – 18:00**      **Dr. Susana Garcia-Sanchez** -NEIKER Institute-Tecnalia, Spain,  
Wide screening of phage-displayed protein libraries to draw plant-pathogen interaction maps

*This session is kindly sponsored the Plant Journal*

### **16:00 – 18:00 Concurrent Session D: Development**

Co-Chairs :- Gwyneth Ingram and Miltos Tsiantis

*Location Sidlaw Auditorium*

- 16:00 – 16:30**      **Prof. Rüdiger Simon** - Heinrich-Heine University, Germany  
Signalling modules controlling the stem cell niche in Arabidopsis
- 16:30 – 17:00**      **Dr. Gwyneth Ingram** - University of Edinburgh, UK  
PHYTOCALPAIN as a key regulator of growth in plants
- 17:00 – 17:15**      **Dr. Dominique Bergmann** - Stanford University, USA  
Asymmetry, pattern and renewal in Arabidopsis stomatal development
- 17:15 – 17:30**      **Dr. Ji-Young Lee** – Cornell University, NY, USA  
Tissue patterning and growth coordinated by a mobile microRNA and SHORT ROOT in the root
- 17:30 – 17:45**      **Kensuke Kawade** - University, Tokyo, Japan  
Leaf size is regulated by a cell-autonomous system linking cell proliferation and post-mitotic cell enlargement
- 17:45 – 18:00**      **Carla Galinha** – University of Oxford, UK  
Repression of apical HD-ZIP III homeobox genes is required for Arabidopsis embryonic root development
- 18:00 – 20:00**      **Poster Session 1**

**Odd numbered poster abstracts to be presented**

A bar will be available during this session

*Location Pentland Auditorium*

*This poster session is kindly sponsored NAASC*

## **Thursday 2<sup>nd</sup> July 2009**

### **09:00 – 10:30 Session 3: Environmental Responses**

Co-Chairs :- Alistair Hetherington and Sally Assmann

*Location Pentland Auditorium*

- 09:00 – 09:30**            **Prof. Alistair Hetherington** - University of Bristol, UK  
The responses of stomata to environmental signals
- 09:30- 10:00**            **Prof. Sally Assmann** - Pennsylvania State University, USA  
ABA and G-protein signalling in Arabidopsis guard cells
- 10:00 – 10:30**            **Dr. Julia Bailey-Serres** - University of California, Riverside, USA  
Low oxygen stress: What is more important cell identity or survival?
- This session is sponsored by the New Phytologist Trust*
- 10:30 – 11:00**            Refreshment Break, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*  
*This refreshment Break is sponsored by ISPMB*

### **11:00-12:30 Session 4: Plant Defence**

Co-Chairs: - Jonathan Jones and Jim Beynon

*Location Pentland Auditorium*

- 11:00 – 11:30**            **Prof. Corne Pieterse** - Utrecht University, The Netherlands  
Networking by small-molecule hormones in plant immunity
- 11:30 – 12:00**            **Dr. Cyril Zipfel** - Sainsbury Laboratory, UK  
Deciphering PAMP-triggered immunity in Arabidopsis
- 12:00 – 12:30**            **Prof. Murray Grant** - University of Exeter, UK  
Effectors affect distal effects; plant systemic reprogramming associated with defence and disease
- This session is kindly sponsored the Plant Biotechnology*
- 12:30 – 14:00**            Lunch, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*

### **14:00 – 16:00 Concurrent Session E: Plant Defence**

Chair :- Jane Glazebrook

*Location Pentland Auditorium*

- 14:00 – 14:30**            **Prof. Jonathan Jones** - Sainsbury Laboratory, UK  
Using Pathogen Effectors to Understand Host Resistance Mechanisms
- 14:30 – 15:00**            **Prof. Jim Beynon** – WHRI, University of Warwick, UK  
Pathogen effectors and host responses

- 15:00 – 15:15**      **Dr. Nicolas Frei dit Frey** - MPI, Cologne, Germany  
Endocytic trafficking: New players in FLS2/flagellin signalling
- 15:15 – 15:30**      **Steven Spoel** - Duke University, USA  
Post-translational modifications of the transcription co-activator NPR1 regulate plant immunity
- 15:30 – 15:45**      **Dr. Fumiaki Katagiri** - University of Minnesota, USA  
New classes of proteins forming complexes with resistance proteins
- 15:45 – 16:00**      **Dr. Morten Petersen** - Copenhagen University, Denmark  
Autophagic Components Contribute to Hypersensitive Cell Death in Arabidopsis

### **14:00 – 16:00 Concurrent Session F: Plant Growth Regulators**

Co- Chairs :- Stefan Kepinski and Joe Kieber

*Location Sidlaw Auditorium*

- 14:00 – 14:30**      **Prof. Joe Ecker** - Salk Institute, USA  
Untangling Transcriptional Regulatory Networks Modulating Hormone Responses
- 14:30 – 15:00**      **Dr. Zhiyong Wang** - Carnegie Institution, USA  
The brassinosteroid signal transduction pathway
- 15:00 – 15:15**      **Prof. Joseph Kieber** - University of North Carolina, USA  
Cytokinin signaling: Two-components and more
- 15:15 – 15:30**      **Dr. Karim Sorefan** – John Innes Centre, UK  
A regulated auxin minimum is required for tissue patterning in Arabidopsis fruit
- 15:30 – 15:45**      **Emanuele Scacchi** - University of Lausanne, Switzerland  
Dynamic, auxin-responsive plasma membrane to nucleus movement of Arabidopsis BRX
- 15:45 – 16:00**      **Dr. Daniela Dietrich** – University of Nottingham, UK  
Divide et impera – cell division in the root and its control through ABA

*This session is sponsored by ISPMB*

- 16:00 – 16:30**      Refreshment Break, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*

### **16:30 – 18:00      Workshops**

#### **1. Stomata- the ins and outs**

*Location Tinto*

#### **2. Root System Architecture**

*Location Moorfoot*

**3. Putting TAIR to work for you - hands-on workshop  
for beginning and advanced users**

*Location Kilsyth*

**18:00 – 20:00**

**Poster Session 2**

**Even numbered poster abstracts to be presented**

A bar will be available during this session

*Location Pentland Auditorium*



## Friday 3<sup>rd</sup> July 2009

### 09:00 -10:30 Session 5: Natural Variation

Co-Chairs: - Caroline Dean and Magnus Nordborg

*Location Pentland Auditorium*

- 09:00 – 09:30**            **Prof. Magnus Nordborg** - University of Southern California, USA  
Genome-wide association study of 100+ phenotypes in common set of *Arabidopsis thaliana* inbred lines
- 09:30- 10:00**            **Prof. Caroline Dean** - John Innes Centre, UK  
Natural variation in Arabidopsis vernalization response
- 10:00 – 10:30**            **Prof. Joanna Schmitt** - Brown University, USA  
Predicting flowering time in changing climates
- 10:30 – 11:00**            Refreshment Break, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*

### 11:00- 12:30 Session 6: Cell Biology

Co-Chairs :- Claire Grierson and Jiri Friml

*Location Pentland Auditorium*

- 11:00 – 11:30**            **Prof. Ian Moore** - University of Oxford, UK  
Small GTPases in post-Golgi and endocytic membrane traffic in Arabidopsis
- 11:30 – 12:00**            **Dr. Silke Robatzek** - MPI Tübingen, Germany  
Cellular dynamics in plant immunity
- 12:00 – 12:30**            **Prof. Jiri Friml** - ZMBP, Tübingen, Germany  
Auxin transport – connecting cell polarity and patterning

### 12:30- 13:30 International Vision for Plant Science 2009

*Location Pentland Auditorium*

- Prof. Andrew Millar** - University of Edinburgh, UK  
**Prof. Joe Ecker** - Salk Institute, USA
- 12:30 – 14:00**            Lunch,  
*Location Strathblane and Cromdale Halls*

## AFTERNOON OFF TO ENJOY EDINBURGH

- 18:00 – 20:00**            **Poster Session 2**  
**All poster abstracts to be presented**  
A bar will be available during this session  
*Location Pentland Auditorium*

**Saturday 4<sup>th</sup> July 2009**

**09:00 – 10:30 Session 7: Signalling in Development**

Co-Chairs Dr. Karen Halliday and Dr Stacey Harmer

*Location Pentland Auditorium*

**09:00 – 09:30**      **Dr. Stacey Harmer** - University of California Davis, USA  
Timing is everything: exploring links between the circadian clock and hormone signaling

**09:30 – 10:00**      **Prof. Nicholas Harberd** - University of Oxford, UK  
Growth Regulation by GA-GID1-DELLA and beyond

**10:00 – 10:30**      **Dr. Christian Fankhauser** - University of Lausanne, Switzerland  
Regulation of shade avoidance by a network of bHLH class transcription factors

**10:30 – 11:00**      Refreshment Break, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*

**11:00 – 12:30 Session 8: Systems Biology**

Co-Chairs Andrew Millar and Philip Benfey

*Location Pentland Auditorium*

**11:00 – 11:30**      **Prof. Enrico Coen** - John Innes Centre, UK  
Development of shape in plants

**11:30 – 12:00**      **Prof. Mark Stitt** - MPI, Germany  
Systems analysis of the diurnal regulation of metabolism and growth

**12:00 – 12:30**      **Prof. Andrew Millar** - University of Edinburgh, UK  
Unwinding the circadian clock with systems biology

*This session is sponsored by the Centre for Systems Biology Edinburgh and the Centre for Plant Integrative Biology*

**12:30 – 14:00**      Lunch, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*

**14:00 – 16:00 Concurrent Session G: Systems Biology**

Co- Chairs :- Reka Albert and Christophe Godin

*Location Pentland Auditorium*

**14:00 – 14:30**      **Prof. Przemyslaw Prusinkiewicz** -University of Calgary, Canada  
A level-set model of leaf form development

**14:30 – 15:00**      **Prof. Reka Albert** - Penn State University, USA  
Dynamic modeling of the signal transduction network corresponding to abscisic acid induced stomatal closure in *Arabidopsis thaliana*

- 15:00 – 15:15**      **Sarah Robinson** – John Innes Centre, UK  
Modelling Cell division in the Arabidopsis leaf epidermis
- 15:15 – 15:30**      **Dr. Adrienne Roeder** – The California Institute of Technology, USA  
Timing of cell division determines the relative cell size pattern in Arabidopsis
- 15:30 – 15:45**      **Dr. Miguel Moreno-Risueno** – Duke University, USA  
A systems biology approach to understanding the root clock
- 15:45 – 16:00**      **Julia Rausenberger** - University of Freiburg, Germany  
From protein dynamics to physiology: phytochrome B mediated photomorphogenesis

**14:00 – 15:45 Concurrent Session H: Bioenergy**

Chair :- Paul Dupree

*Location Sidlaw Auditorium*

- 14:00 – 14:30**      **Prof. Henrik Vibe Scheller** - Lawrence Berkeley National Laboratory, USA  
Arabidopsis as a model for cell wall biosynthesis in bioenergy crops.
- 14:30 -15:00**      **Dr. Ruben Vanholme** - Ghent University, Belgium  
Systems biology of lignification and relevance to biofuels
- 15:00 – 15:15**      **Dr. Kerrie Farrar** – IBERS, University of Aberystwyth, UK  
Exploiting Model Species to Increase Biomass Yield in Energy Crops
- 15:15- 15:30**      **Dr. Raymond Wightman** – University of Manchester, UK  
Assembly of the Cellulose Synthase Complex occurs within a specialised compartment that is derived from the endoplasmic reticulum.
- 15:30 – 15:45**      **Dr. Thorsten Hamann** – Imperial College London, UK  
Using *Arabidopsis thaliana* to improve feedstock quality
- 16:00 – 16:30**      Refreshment Break, Posters and Exhibition  
*Location Strathblane and Cromdale Halls*
- 16:30 – 18:00**      **Workshops**
- 1. Pollen Development**  
                         *Location Tinto*
- 2. Ambient Temperature**  
                         *Location Moorfoot*
- 19:30 – 23:00**      **ICAR 2009 Conference Dinner**

*Location Strathblane and Cromdale Halls*

The Conference Dinner will take place in the Cromdale Hall. Delegates will be able to enjoy pre-dinner drinks in the Strathblane Hall from 1930 hours. Dinner will be followed by a Ceilidh in the Strathblane Hall.