# ACPFG Annual Research Meeting Salinity 16th to 18th November 2009 Program

## MONDAY 16TH NOVEMBER FIELD AND YIELD

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|---|---|
| 09:00 | Welcome |
| 09:15 | Saline soils<br>Pichu Rengasamy *(University of Adelaide)* |
| 09:45 | The economic impact of salinity<br>Mike Ewing *(CRC Future Farm Industries)* |
| 10:15 | Salinity tolerance in barley – a breeder's perspective<br>Stewart Coventry *(Barley Breeding Australia)* |
| **10:45** | **Morning tea** |
| 11:15 | Breeding for salinity tolerance in barley<br>Meixue Zhou *(Uni Tasmania)* |
| 11:45 | Field studies of salinity tolerance in wheat<br>Tim Setter *(DAFWA)* |
| 12:15 | Field studies of salinity tolerance in Indian wheat, rice and pulses<br>S K Sharma *(Central Soil Salinity Research Institute, Karnal)* |
| **12:45** | **Lunch** |
| 13:45 | Breeding for salinity tolerance using synthetic wheats<br>Francis Ogbonnaya *(ICARDA)* |
| 14:15 | Large scale field selections in Dubai<br>Nanduri K. Rao *(International Centre for Biosaline Agriculture)* |
| 14:45 | Field measurements of salinity tolerance in South Australia<br>Glenn McDonald *(University of Adelaide)* |
| **15:30** | **Afternoon tea** |
| 16:00 | Oral Presentations |
| 16:45 | Poster session |
| 17:30 | Conclusion |
| **18:00–19:00** | **Lord Mayor's Reception, Adelaide Town Hall** |

## TUESDAY 17TH NOVEMBER PHYSIOLOGY & TRAIT DISSECTION

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| 09:00 | The Plant Accelerator and dissection of salinity tolerance traits<br>Mark Tester *(ACPFG)* |
| 09:30 | Using imaging of growth and death through time to separate components of salinity tolerance<br>Karthika Rajendran *(ACPFG)* |
| 10:00 | Interactions of salinity with waterlogging<br>Tim Colmer *(University WA)* |
| **10:45** | **Morning tea** |
| 11:15 | Thermal imaging screening to identify variation in osmotic tolerance<br>Richard James *(CSIRO Plant Industry)* |
| 11:45 | $Na^+$ transport and tolerance in wheat<br>Rana Munns (CSIRO Plant Industry) |
| 12:15 | $Na^+$/ B interactions<br>Andre Lauchli *(UC Davis)* |
| **12:45** | **Lunch** |
| 14:00 | The role of $Cl^{1-}$ toxicity in wheat.<br>Yash Dang *(Qld DPI)* |
| 14:30 | The role of $Cl^{1-}$ exclusion in salinity tolerance of Lotus species<br>Natasha Teakle *(University WA)* |
| 15:00 | The role of root $K^+$ transport in salinity tolerance of barley and wheat<br>Sergiy Shabala and/or Tracey Cuin *(University Tasmania)* |
| **15:30** | **Afternoon tea** |
| 16:00 | Talks selected from posters |
| 17:00 | Conclusion |
| **18:30** | **Symposium dinner – Jolley's Boathouse for 19:00 start** |

## WEDNESDAY 18TH NOVEMBER
## GENES AND MACHINES

09:00 Genetics, genomics and gene discovery in barley
Robbie Waugh *(SCRI)*

09:45 Discovery of genes related to salinity tolerance in wheat
Mike Francki *(DAFWA)*

10:15 Water transport and control of water channels
Steve Tyerman *(University Adelaide)*

**10:45 Morning tea**

11:15 $Na^+$ transporters and engineering salinity tolerance
Maris Apse *(Arcadia)*

11:45 Two intracellularly-localised Arabidopsis $Na^+$/$H^+$ antiporters act redundantly to regulate plant development
Anthony Gendall *(La Trobe University)*

12:15 Epigenetic control of salinity tolerance
Anna Amtmann *(Glasgow)*

**13:00 Lunch**

14:00 Transcriptional profiling in single cell types
Alex Johnson *(ACPFG)*

14:30 Metabolomic profile changes in response to salt stress
Ute Roessner *(ACPFG and Metabolomics Australia)*

15:00 The role of Ca sensing proteins and protein phosphorylation in salinity tolerance
Sheng Luan *(UC Berkeley)*

**15:30 Afternoon tea**

16:00 A novel protein kinase involved in $Na^+$ exclusion revealed from positional cloning
Stuart Roy *(ACPFG)*

16:30 Concluding summary
Mark Tester *(ACPFG)*

**17:00 Conclusion**

## Australian Plant Phenomics Facility Introductory Workshop

**How CAN The Plant Accelerator address biological problems?**
**19th November 2009**

The aims of this one day workshop are:

- To introduce researchers to current applications of The Plant Accelerator's capabilities
- To develop ideas interactively for new experiments and new ways to benefit from this new facility
- To help people conceive and design experiments using The Plant Accelerator
- To encourage researchers to undertake preliminary experiments to learn the Facility's capabilities and obtain preliminary results to support grant applications.

**Ideal number of participants:** A maximum of 20 participants will facilitate discussions

**Target audience:** Graduate students and post-docs – group leaders welcome, too!

The day will start with a small number of talks outlining:

- The overall capability of the Facility
- Some specific experiments that have been undertaken with the Facility's equipment
- The central importance of data management and analysis

We then envisage breaking up into small groups of people with common interests and problems to 'workshop' ideas for a couple of hours, then groups report back to the overall group, before breaking out again for further more detailed discussions, perhaps with group compositions changing at this stage.

The day will then be pulled together to try to synthesise the outputs of the discussions and discuss plans for future work in The Accelerator.