



# Plant Phenomics Workshop

Techniques for Molecular Biology and Ecophysiology  
Feb 9 - 12, 2009 Canberra

## Information for participants

Mornings lectures will be held at the Research School of Biological Sciences (RSBS) Robertson Lecture Theatre. Coffee and tea are provided from 8:30 and lectures will start at 9:00 am. Lecture outlines will be provided prior to each lecture and at the end of the workshop you will be given electronic copies of lectures. Afternoon practical demonstrations have different locations to which you will be escorted.

Morning tea, lunch and a light afternoon tea are provided. At the end of the first day please join us for 'happy hour' back at RSBS.

Contact Sue Cossetto on 6125-5896 or [susan.cossetto@anu.edu.au](mailto:susan.cossetto@anu.edu.au)

### Day 1 - Monday Feb 9

#### Gas exchange and fluorescence techniques

*Morning Lectures: 9:00 am Robertson Lecture Theatre RSBS*

Lecture: "Basic" plant gas exchange	John Evans, RSBS, ANU
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Morning Tea

Lecture: Chlorophyll fluorescence as a measurement tool in plant physiology	Murray Badger, ARC Centre of Excellence in Plant Energy Biology
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Lunch

*Afternoon Demonstrations: 2:00 pm BaMBi Teaching Lab*

Li cor 6400 gas exchange +/- fluorescence
Fluorescence imaging of plant leaves

### Day 2 - Tuesday Feb 10

#### Measuring plants under soil and water stress conditions

*Morning Lectures: 9:00 am Robertson Lecture Theatre RSBS*

Lecture: The perils of pot experiments: aberrant water status and temperature, and inadvertent waterlogging	John Passioura, CSIRO PI
Lecture: Some methods for measuring plant water stress	Rana Munns, CSIRO PI

Morning Tea

Lecture: Measuring Water Use Efficiency: Scaling from leaf to field	Tony Condon, CSIRO PI
Lecture: Merging phenomics and genomics for plant improvement	Greg Rebetzke, CSIRO PI

Lunch

*Afternoon Demonstrations: 2:00 pm CSIRO Crop Adaptation*

Pressure bomb - accuracy vs speed
Porometers
Experimental techniques for studying water stress



## Day 3 - Wednesday Feb 11

### Imaging analysis of plant growth and function

#### Morning Lectures: 9:00 am Robertson Lecture Theatre RSBS

Lecture: Hyperspectral and thermal analysis of leaves	Professor Marilyn Ball, RSBS, ANU
Lecture: Image capture analysis and plant growth imaging techniques	Jasper Pengelly RSBS, ANU AND Xavier Sirault, CSIRO PI

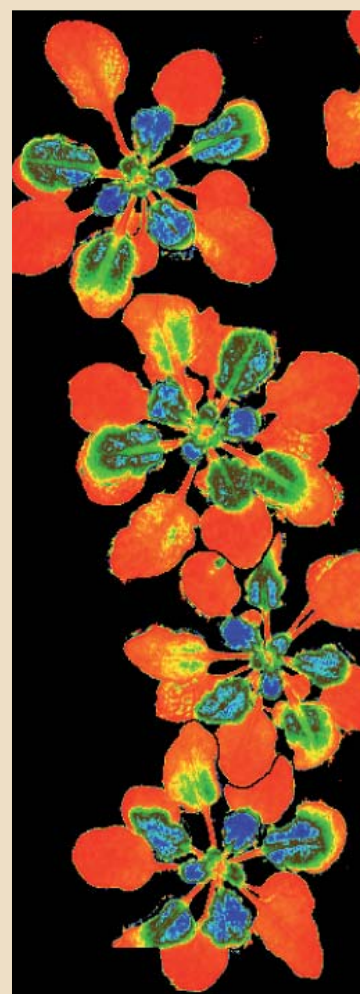
#### Morning Tea

Lecture: Non-invasive ways to monitor plant viability	Barry Pogson, ARC CoE in Plant Energy Biology
Lecture: Interface to NCRIS Plant Phenomics Facility	Bob Furbank, CSIRO PI

#### Lunch

#### Afternoon Demonstrations: 2:00 pm CSIRO Plant Industry

Growth analysis/Scanalyzer image capture  
ASD Hyperspectral  
Thermal leaf imaging



## Day 4 - Thursday Feb 12

### Plant analysis at the microscale

#### Morning Lectures: 9:00 am Robertson Lecture Theatre RSBS

Lecture: Plant analysis at the microscale - microscopy for imaging and analysis	Rosemary White, CSIRO PI
Lecture: Spectral imaging of fluorescent compounds in roots	Anton Wasson, BaMBi ANU

#### Morning Tea

Lecture: The relationship between stomatal conductance and photosynthesis	Susanne von Caemmerer, RSBS ANU
<i>Demonstration:</i> Microscopy tour, FTIR microscope for analysis of plant tissues	CSIRO Microscopy

#### Lunch

#### Afternoon Demonstrations: CSIRO Microscopy and RSBS

Fluorescence imaging of roots using confocal microscopy  
Reprise of gas exchange and fluorescence (RSBS)



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Morris

Scientific

50  
Years  
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