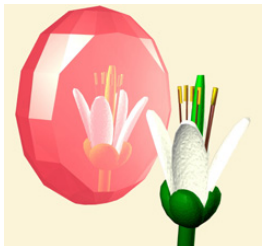


# GARNet

Genomic Arabidopsis Resource Network

## Resources, Community and Coordination



GARNet is Co-ordinated  
by Andrew Millar



GARNet is funded by the BBSRC



GARNet website hosted by  
NASC

## Potted History

- ✿ GARNet (Genomic Arabidopsis Research Network) was formed in 2000.
- ✿ Original aim:- to provide reliable, efficient, user-driven and publicly available functional genomics resources for Arabidopsis.
- ✿ Services provided by GARNet included
  - (1) Transcriptomics and Bioinformatics centre at NASC.
  - (2) Metabolomics facility at Rothamsted.
  - (3) Proteomics facility at Cambridge.
  - (4) Other resources
- ✿ Today GARNet's co-ordination activities are funded by BBSRC until 2010  
Who is involved?  
Co-ordinator Andrew Millar in Edinburgh  
GARNet Advisory Committee 12 Members elected by the community
- ✿ For more information on all of GARNet's Activities <http://garnet.arabidopsis.info>

## GARNet Aims

Genomics resources and service info

Web site, newsletter, GARNet meeting

News on funding, new technologies,  
tools and techniques

Web site, newsletter, GARNet meeting

International coordination

UK rep. for MASC and ERA-PG

Links to other plant communities

ABC

## Arabidopsis and Beyond to Crops

- ✿ Started in response to the Crop Science Review
- ✿ Goal to
  - (a) To improve current interactions and information exchange between Arabidopsis and Crop scientists.
  - (b) Further integrate plant science based on common underlying genomics and trait biology
- ✿ Survey
  - (a) Carry out a comprehensive survey of plant science undertaken in the UK
  - (b) Questionnaire sent out to Arabidopsis, Brassica and Cereal communities
  - (c) Searchable database on the web soon to aid collaboration and increase awareness
  - (d) Future involvement of other UK Plant communities e.g Solanaceae and Legumes

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 Web Site <http://www.bio.bris.ac.uk/people/grierson.htm>

### Main Research

- Root hair development, polar growth
- The role of S-acylation in plant cell growth and signalling

### Team Members

Team Member	Research Interest	Email
Eric Lalanne	Rho GTPase signalling during root hair growth	<a href="mailto:Eric.Lalanne@bris.ac.uk">Eric.Lalanne@bris.ac.uk</a>
Matt Smallman	Interactions between ROPs and their negative regulators in root hairs	<a href="mailto:Matt.Smallman@bris.ac.uk">Matt.Smallman@bris.ac.uk</a>
Piers Hemsley	S-acylation in plant cell growth and signalling	<a href="mailto:Piers.Hemsley@bris.ac.uk">Piers.Hemsley@bris.ac.uk</a>
Fran Salisbury	Regulation of root development by light	<a href="mailto:Frances.Salisbury@ed.ac.uk">Frances.Salisbury@ed.ac.uk</a>
Angharad Jones	Role of ABP1 in root hair development	<a href="mailto:Angharad.Jones@bristol.ac.uk">Angharad.Jones@bristol.ac.uk</a>
Sarah Usher	Genetic control of root hair development	<a href="mailto:Sarah.Usher@bris.ac.uk">Sarah.Usher@bris.ac.uk</a>
Muthukumar Bagavathiannan (from October 2005)	Potential to model root hair development	not yet availal
Muthukumar Bagavathiannan (from October 2005)	Root hairs of rice and brassicas	not yet availal

### Research Areas

Research Area	Relevance	Facilitation?
Mechanisms of root hair growth	Nutrient efficiency, sustainable agriculture through reduced or better targeted use of fertilisers,	Modifications to root hair development alongside tests for effects on crop performance
Control of polar growth in root hairs and pollen tubes	Controlling plant fertility	Interaction with experts in crop fertility, further research into basic mechanisms
Root hairs of rice and brassicas	Manipulating crop performance?	Modifications to root hair development alongside tests for effects on crop performance
Potential to model root hair development	Predictable manipulation of plant cell architecture for bioengineering,	Proof of concept, quantitative knowledge about mechanism of root hair growth

### Species

- Arabidopsis
- Brassica
- Rice

## Systems Biology

- ✿ Aims to understand all the components of a biological system and their interactions, across all relevant levels of organisation
- ✿ BBSRC request for a report on UK Plant Systems Biology
- ✿ Interfacing System Biology with Crops and Ecosystems Workshop, Swindon  
Bring together scientists from systems biology, bioinformatics and agro-ecological communities to exchange ideas and explore synergisms
- ✿ Arabidopsis research can learn a lot from Crop Science experience in SysBio
- ✿ Outcomes
  - (a) For Economic impact align models to field applications
  - (b) Centre Arabidopsis models on complex traits of interest and use to crop science
  - (c) Focus on traits for public good e.g. diet, health and bioenergy
  - (d) Additional area for model to crop interactions

## Making Connections – Plant Research to Crop Products

- ✿ Rothamsted Research 31<sup>st</sup> October 2006
- ✿ Bring together plant and crop scientists from industry and academia
- ✿ Discuss current problems in the basic plant research to product pipeline
- ✿ Identify mechanism to improve the pipeline
- ✿ More info to follow on GARNet website and ArabUK



# GARNet 2006

## Plant Networks

### How to Integrate data

Speakers to include

- █ **Willem Gruissem**
- █ **Kazuko Y-Shinozaki**
- █ **Joanna Schmitt**
- █ **Oliver Ratcliffe**
- █ **Jim Haseloff**

- ETH Zurich
- Tokyo University
- Brown University
- Mendel Biotechnology
- University of Cambridge

11- 12 September

<http://garnet.arabidopsis.info>