

Sunday 5th September

14:00-18:00 Registration

18:00 - 18:15 Prof Howard Davies (Deputy Director, SCRI) and SOL2010 organising committee

Welcome to SOL 2010

18:15 - 19:00 Prof Sir David Baulcombe FRS

Dept of Plant Sciences, University of Cambridge, UK

Genome interactions in hybrid *Solanum* species and RNA silencing

19:30- 21:30 Welcome reception, Discovery Quay (includes drinks and snacks)

Monday 6th September

Session 1: SOL Biodiversity and Evolution (Chair Sandy Knapp) – City Quay Suite

09:00 - 09:30 Mario Vallejo-Marin

University of Stirling, UK

Interactions between anther morphology and pollinator behaviour in *Solanum* and their implications for floral evolution

09:30 - 10:00 Andrew Leitch

Queen Mary University, London, UK

Evolution of allopolyploids in the genus *Nicotiana*

10:00 - 10:15 Daniel Matton

Université de Montréal, Canada.

Pollen tube guidance in Solanaceous species: a highly species-specific interspecific breeding barrier

10:15 - 10:30 Mathilde Causse

INRA, Montfavet, France

Genome admixture of *Solanum lycopersicum* var *cerasiforme* allows successful association mapping in tomato

10:30 - 10:45 Dora Szinay

Wageningen University, Netherlands

Chromosomal evolution in *Solanum* with cross-species FISH painting

10:45 - 11:15 Tea & Coffee Break

Session 2: Plant Growth and Development (Chair Jim Giovannoni) - City Quay Suite

- 11:15 - 11:40 Mondher Bouzayen
Université de Toulouse, France
The tomato Auxin Response Factor ARF8 is a central figure of the mechanism controlling fruit set initiation
- 11:40 - 12:00 Neelima Sinha
University of California Davis, USA
EvoDevo meets Genomics – The Lycopersicon complex in tomato
- 12:00 - 12:15 Graham Seymour
University of Nottingham, UK
Developmental regulation of ripening in fleshy fruits
- 12:15 - 12:30 Naomi Ori
Hebrew University of Jerusalem, Israel
Regulation of tomato compound leaf development by cytokinin and auxin
- 12:30 - 12:45 Tom Gerats
Radboud University, Netherlands
Developmental mutants in *Petunia*
- 12:45 - 13:00 David Clark
University of Florida, USA
A petunia R2R3-MYB transcription factor involved in the dynamic process of anthesis
- 13:00 - 14:00 Lunch
- 14:00 - 15:30 Posters (odd numbers) and coffee – Mezzanine level**

Session 3: SOL Genomes (Chair Rene Klein Lankhorst) - City Quay Suite

- 15:30 - 16:00 Giovanni Giuliano
ENEA, Italy
The genome that makes tomatoes
- 16:00 - 16:30 Robin Buell
Michigan State University, USA
The Potato Genome Sequence
- 16:30 - 16:50 Nikolai Ivanov
Philip Morris International, Switzerland
Challenges of tobacco genome sequencing and assembly
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16:50 - 17:10 Doil Choi
Seoul National University, Korea
Toward completion of the genome that makes hot pepper

17:10 - 17:30 Bicheng Yang
Beijing Genomics Institute, China
Genomics solutions on developing reference genomes in BGI

17:30 - 19:00 Optional poster viewing

19:30 Dinner at Apex Hotel (including whisky tasting) - City Quay Suite

Tuesday 7th September

Session 4: Biotic Stress (Chair Doil Choi) - City Quay Suite

09:00 - 09:25 Sophien Kamoun
Sainsbury Laboratory, UK
Exploiting pathogen effectors in breeding and deployment of disease resistance

09:25 - 09:50 Chuanyou Li
Institute of Genetics and Developmental Biology, China
Dissection of systemin/jasmonate-signaled defence responses in tomato

09:50 - 10:15 Seon-In Yeom
Seoul National University, Korea
A pepper hybrid proline-rich protein 1 (HyPRP1) is a negative regulator in defence response against pathogens but a positive regulator in cell death

10:15 - 10:30 Palchamy Kadirvel
AVRDC: The World Vegetable Center, Taiwan
Mapping of QTLs associated with resistance to a virus causing tomato yellow leaf curl disease (TYLCD) in tomato

10:30 - 10:45 Ken-Taro Sekine
Iwate Biotechnology Research Center, Japan
Isolation of N¹, one of the most famous plant virus resistance genes

10:45 - 11:15 Tea & Coffee Break

Session 5: Abiotic stress (Chair Andrew Thompson) - City Quay Suite

- 11:15 - 11:35 Andrew Thompson
University of Warwick, UK
Improving water use efficiency and water capture in tomato: transgenic and QTL approaches
- 11:35 - 11:55 Menachem Moshelion
Hebrew University of Jerusalem, Israel
The role of Solanaceae aquaporins in improving plant vigour, abiotic stress tolerance and yield production
- 11:55 - 12:10 Antonio Di Matteo
University of Naples "Federico II", Italy
Genetic control of fruit quality in tomato plants under water deficiency
- 12:10 - 12:25 Rachael Symonds
AVRDC: The World Vegetable Center, Taiwan
Genetic, physiological, and molecular approaches to improve drought tolerance in tropical tomato
- 12:25 - 12:40 Michel Ghanem
Université Catholique de Louvain, Belgium
Ameliorating the impacts of salinity on crop yield by altering root-to-shoot hormonal signalling
- 12:40 - 13:00 Jocelyn Rose
Cornell University, USA
New insights into the biosynthesis, functions and architecture of the tomato fruit cuticle through tissue specific RNA-seq profiling and other 'omics' platforms.
- 13:00 - 14:00 Lunch

14:00 - 15:30 Posters (even numbers) and coffee – Mezzanine level

Session 6: Translational Genomics and Molecular Breeding (Chair Mathilde Causse) - City Quay Suite

- 15:30 - 16:00 Ester van der Knaap
Ohio State University, USA
Classification of tomato varieties based on germplasm class, fruit shape category, fruit shape genes, and genetic clusters.

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| 16:00 - 16:30 | Walter de Jong <i>Cornell University, USA</i> SolCAP: developing SNP markers in elite germplasm for applied potato breeding |
| 16:30 - 16:50 | Laura Toppino <i>CRA-ORL, Unità di Ricerca per l'Orticoltura, Italy</i> Gene-containment system based on artificial-microRNA mediated inactivation of two general transcription factors in <i>S.melongena</i> L |
| 16:50 - 17:10 | Christiane Gebhardt <i>Max-Planck Institute for Plant Breeding Research, Germany</i> Natural variation in potato: Linking candidate gene variation to complex traits |
| 17:10 - 17:30 | Ilan Paran <i>The Volcani Center, Israel</i> Variation in pigment content in pepper fruit is associated with plastid compartment size |
| 20:30 - 22:30 | Tomato / Potato/ Other Genome discussion meetings |

Wednesday 8th September

Session 7a: Informatics and computational biology (Chair Klaus Mayer) - City Suite

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| 09:00 - 09:20 | Björn Usadel <i>Max Planck Institute of Molecular Plant Physiology, Germany</i> Sequencing of the <i>S. pennellii</i> genome as an approach to investigate diversity in the tomato clade |
| 09:20 - 09:40 | Maria Ercolano <i>University of Naples "Federico II", Italy</i> A combined approach for tagging R-genes candidate loci in tomato genome |
| 09:40 - 10:00 | David Martin <i>University of Dundee, UK</i> Developing informatics resources for end users of the Potato Genome Sequence Project data. |
| 10:00 - 10:20 | John P. Hamilton <i>Michigan State University, USA</i> Single nucleotide polymorphism identification from potato and tomato short read transcriptome sequences |

10:20 - 10:40 Dan Bolser
University of Dundee, UK
In silico approaches for anchoring the potato genome

Session 7b: Tools and emerging technologies (Chair Toni Granell) - Quay Suite

09:00 - 09:30 Diego Orzaez
Instituto de Biología Molecular y Celular de Plantas (IBMCP), Spain
Filling the fruit toolbox with new biotech tools: from transient expression to shared genetic pieces and beyond.

09:30 - 10:00 Jose M Jimenez
University of California Davis, USA
RNA-seq analysis of the shade avoidance response in tomato and its wild relatives

10:00 - 10:15 Tony Conner
New Zealand Institute for Plant & Food Research, New Zealand
Plant transformation using DNA minicircles without vector backbone sequences

10:15 - 10:30 Lorenzo Barchi
University of Torino, Italy
Construction of an intra-specific linkage map in eggplant and SNPs identification by next generation sequencing of RAD tags.

10:30 - 10:45 Rameshwar Sharma
University of Hyderabad, India
Eco-TILLING in tomato to unravel the hidden gifts of nature

10:45 - 11:15 Tea & Coffee Break

Session 8a: Tomato (Chair Ramesh Sharma) - Quay Suite

11:15 - 11:45 Cornelius Barry
Michigan State University, USA
Tomato trichomes as a model system for exploring diversity within specialised secondary metabolism

11:45 - 12:15 Romyana Karlova
Wageningen University, Netherlands
Tomato APETELA2 functions in fruit development and in a ripening regulatory network together with CNR

- 12:15 - 12:30 Irene Romero De La Fuente
Plant Research International, The Netherlands
Searching for the genes involved in the production and release of flavour-related tomato fruit volatiles
- 12:30 - 12:45 Yellamaraju Sreelakshmi
University of Hyderabad, India
Phototropin1: A new player in regulating the shelf life of tomato fruits
- 12:45 - 13:00 Maxim Itkin
Weizmann Institute of Science, Israel
The Tomato GAME1 Glycosyltransferase is Involved in the Metabolism of Steroidal Glycoalkaloids

Session 8b: Potato (Chair Mark Taylor) - City Suite

- 11:15 - 11:45 Caius Rommens
JR Simplot Company, USA
Potato genetic engineering: Adapting existing varieties to the emerging needs of the 21st century
- 11:45 - 12:15 Kåre Lehmann Nielsen
Aalborg University, Denmark.
Sequence tag based transcriptome analysis are providing valuable insight into the molecular responses underpinning differential yield as well as biotic and abiotic stress responses of different cultivars
- 12:15 - 12:30 Bjorn Kloosterman
Wageningen University, The Netherlands
An integrative -omics approach for studying potato tuber quality traits
- 12:30 - 12:45 Ray Campbell
SCRI, UK
Progress in our understanding of carotenoid accumulation in potato tubers
- 12:45 - 13:00 Gisella Orjeda
Universidad Peruana Cayetano Heredia, Peru
Construction and utilisation of a dense genetic map to anchor and organise the potato genome

Session 8c: Other Solanaceae species (Pepper, tobacco, eggplant, petunia etc) (Chairs Ilan Paran and Nikolai Ivanov) – Art Gallery (Mezzanine level)

- 11:15 - 11:45 Gregor Bindler
Philip Morris International, Switzerland
A genetic map for *Nicotiana tabacum* based on an F2 from Red Russian X Hicks Broad Leaf
- 11:45 - 12:15 Heejin Jeong
Seoul National University, Korea
The survey of natural variations and EMS induced mutations in *Capsicum*
- 12:15 - 12:30 Rachel Meyer
City University of New York & New York Botanical Garden, USA
Diversity of phenolic content in Asian eggplant landraces and near wild relatives
- 12:30 - 12:45 Thomas A. Colquhoun
University of Florida, USA
PhMYB4 fine-tunes the floral volatile signature of *Petunia x hybrida*
- 12:45 - 13:00 Aureliano Bombarely Gomez
Cornell University, USA
Phylogenomic Analysis of Cultivated Tobacco
- 13:00 – 14:00 Lunch
- 14:00 - 15:15 Lukas Mueller
Boyce Thompson Institute, Ithaca, NY
SGN workshop - Art Gallery (Mezzanine level)
- 15:30 **Departure of excursion to Verdant Works and conference dinner**
19:30 **Reception and conference dinner at Guthrie Castle**

Thursday 9th September

Session 9: Metabolomics /Proteomics (Chair Alisdair Fernie) - City Quay Suite

- 09:00 - 09:30 Sonia Osorio
Max-Planck-Institut für Molekulare Pflanzenphysiologie, Germany
The chemical composition underlying Brix

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- 09:30 - 10:00 Asaph Aharoni
Weizmann Institute of Science, Israel
TAGL1 and ORR impinge on ripening and carotenoid metabolism in tomato fruit
- 10:00 - 10:15 Ryan McQuinn
Cornell University, USA
Apricot (at/at): A novel ripening regulator controlling antioxidant accumulation in *Solanum lycopersicum* (cv. Ailsa craig)
- 10:15 - 10:30 Lukas Müller
Cornell University, USA
Connecting the Solanaceae genome to the metabolic networks via SolCyc and MetaCyc
- 10:30 - 10:45 Mireille Faurobert
INRA Montfavet, France
“Genetical Proteomics” to tomato fruit quality
- 10:45 - 11:15 Tea & Coffee Break

Session 10: Functional Genomics and Systems Biology (Chair Koh Aoki) - City Quay Suite

- 11:15 - 11:40 Takayuki Tohge
Max-Planck-Institut für Molekulare Pflanzenphysiologie, Germany
Elucidation of biosynthetic pathway of secondary metabolism for design of metabolomics-assisted breeding approaches
- 11:40 - 12:00 Antonio Granell
Instituto de Biología Molecular y Celular de Plantas (IBMCP), Spain
A fruit specific VIN1 GUS::GFP fusion reveals interspersed tomato fruit cells with an activated carbohydrate metabolism program
- 12:00 - 12:20 Wilco Ligterink
Wageningen University, The Netherlands
Putting omics tools to work: Unraveling the complex trait of seed quality in tomato by genetical genomics
- 12:20 - 12:40 Silin Zhong
Cornell University, USA
The dynamic transcriptomic and epigenetic landscape during tomato fruit development
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| 12:40 - 13:00 | Tamas Dalmay <i>University of East Anglia, UK</i> Integration of short RNA, mRNA and degradome profiling during fruit development |
| 13:00 - 13:15 | Hiroshi Ezura <i>University of Tsukuba, Japan</i> Introduction to SOL2011 |
| 13:15 – 14:15 | Lunch |
| 14:30 – 15:30 | Closing of SOL2010 including SOL open meeting |
| 15:30 | Tea & Coffee/ Departure |