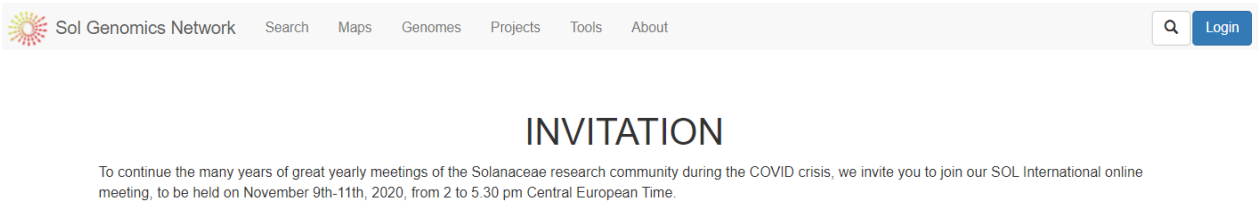
# Genebank genomics highlights novel centres of diversity and routes of migration in pepper (Capsicum spp.)

Pasquale Tripodi, Lorenzo Barchi, S Kale, S Esposito, M T Rabanus-Wallace, A Acquadro, R Schafleitner, J Prohens, M J Diez, A Börner, et al.

Tripodi P, Barchi L, Kale S, Esposito S, Rabanus-Wallace MT, Acquadro A, Schafleitner R, Prohens J, Diez MJ, Börner A, Bovy A, Salinier J, Boyaci F, Pasev G, Brandt R, Himmelbach A, Portis E, Finkers R, Lanteri S, Paran I, Lefebvre V, Giuliano G, Stein N. **2020**. Genebank genomics highlights novel centres of diversity and routes of migration in pepper (*Capsicum spp.)*. **SOL International Meeting 2020**, November 9-11, 2020, on line [Communication orale + Résumé]

Tripodi P (Orateur),

https://solgenomics.net/sol2020




# MEETING PROGRAM

November 9th, 2020

13:40- 13:55 CET - SOLIOM Meeting opening.

Session 1: BIOTECHNOLOGY
View session recording

Session opens at 13:55 and closes at 15:30

- 14:00-14:25 CET BIOop: **Alain Goossens**, VIB-Ghent University, Belgium. *Unraveling the regulation of tomato metabolism through interactomics analyses.*
- 14:25-14:40 CET BIOo01: **Peter Waterhouse**, Queensland Univ of Technology, Australia. *Genetic, epigenetic and metabolomic insights from reference level genome assembly of a wild and a laboratory strain of Nicotiana benthamiana.*
- 14:40-14:55 CET BIOo02: **Johan Hunziker**, University of Tsukuba, Japan. *Improvement of carotenoid accumulation in tomato fruits by CRISPR-Cas9 Cytidine Deaminase system.*
- 14:55-15:10 CET BIOo03: **Eva Knoch**, RIKEN, Japan. *The third DWF1 paralog in Solanaceae, sterol D24-isomerase, branches withanolide biosynthesis from the general phytosterol pathway*.
- 15:10-15:25 CET BIOo04: **Lorena Ramirez**, Wageningen University, The Netherlands. *A new insight of StCDF1 under drought stress in potato*.

15:30-16:00 CET - Break

## Session 2: DIVERSITY AND EVOLUTION

View session recording

Session opens at 15:55 and closes at 17:30

- 16:00-16:25 CET EVOop: **Chris Martine**, Bucknell University, USA. *Sexual fluidity among the bush tomatoes: Prickly solanums of the Australian Monsoon Tropics.*
- 16:25-16:40 CET EVOo01: **Matthew Gibson**, Indiana University, USA. *Reconstructing the history and biological consequences of a plant invasion on the Galapagos islands*
- 16:40-16:55 CET EVOo02: **Pasquale Tripodi**, CREA Research Center for Vegetable and Ornamental Crops, Italy. *Genebank genomics highlights novel centers of diversity and routes of migration in pepper (*Capsicum *spp.).*
- 16:55-17:10 CET EVOo03: **Andrea Coccuci**, Instituto Multidisciplinario de Biologia Vegetal (IMBIV-UNC), Universidad Nacional de Cordoba, Argentina. *Flower color evolution in the florally diverse genus* Salpichroa *(Solanaceae) seen through the eyes of its pollinators.*
- 17:10-17:25 CET EVOo04: **Remco Stam**, Technical University of Munich, Germany. *Using wild tomato species to study diversity and evolution of biotic stress responses.*

17:30 - 17:45 CET: Break
17:45 - 18:30 CET: Poster session 1 (BIO1, EVO1, DEV1)

November 10th, 2020
12:55 - 13:40 CET: Poster session 2 (BIO2, EVO2, DEV2).
13:40 - 13:55 CET: Break

## Session 3: DEVELOPMENT

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Session opens at 13:55 and closes at 15:30

- 14:00 - 14:25 CET DEVop: **Sebastian Soyk,** University of Lausanne, Switzerland. *Dissecting cryptic genetic variation with impact on tomato domestication and breeding*.
  14:25 - 14:40 CET DEVo01: **Glenn Philippe**, Cornell University, USA. *Elucidating the mechanisms of plant cuticle deposition and restructuring using tomato fruit development as a model.*
- 14:40 - 14:55 CET DEVo02: **Bruno Silvestre Lira**, Universidade de So Paulo, Brazil. *Light and ripening-regulated B-BOX protein-encoding genes in Solanum lycopersicum.*
- 14:55 - 15:10 CET DEVo03: **Matthias Benoit**, CSHL, USA. *Contribution of Transposons to Structural Variation and Phenotypic Diversity in Tomato.*
- 15:10 - 15:25 CET DEVo04: **Ashley Snouffer**, University of Georgia, USA. *Regulation of cell division and cell shape by tomato OFPs and TRMs to control early ovary shape.*

15:30 - 16:00 CET Break

## Session 4: NETWORKS OF METABOLITES, GENES AND ORGANISMS

View session recording

Session opens at 15:55 and closes at 17:30

- 16:00 - 16:25 CET NETop: **Asaph Aharoni**, Weizmann Institute of Science, Israel. *The Bitter - Sweet Sides of Solanaceae-Specialized Metabolism.*

- 16:25 - 16:40 CET NETo01: **Luisa Fernanda Bermudez Salazar**, IABIMO, INTA- CONICET, Argentina, *Deciphering the epigenetic variability in S. lycopersicum accessions and their influence on hybrid vigor*.
- 16:40 - 16:55 CET NETo02: **Lara Pereira**, University of Georgia, USA. *Natural genetic diversity in tomato flavor genes*.
- 16:55 - 17:10 CET NETo03: **Gustavo A. Silva-Arias**, Technical University of Munich, Germany. *Ecological genomics in wild tomatoes to reveal mechanisms of adaptation to living in the driest region of the world*.
- 17:10 - 17:25 CET NETo04: **Salvador Torres Montilla**, CRAG, Spain. *A novel system for the artificial differentiation of chromoplasts from pre-existing chloroplasts in leaves*

17:30 - 17:45 CET: Break
17:45 - 18:30 CET: Poster session 3 (NET1, STR1, BRE1).

November 11th, 2020
12:55 - 13:40 CET: Poster session 4 (NET2, STR2, BRE2).
13:40 - 13:55 CET: Break

### Session 5: STRESS BIOLOGY (BIOTIC AND ABIOTIC)

View session recording

Session opens at 13:55 and closes at 15:30

- 14:00 - 14:25 CET STRiop: **Parvinderdeep Kahlon**, TUM School of Life Sciences, Technical University of Munich, Germany. *Population studies of the wild tomato species Solanum chilense reveal geographically structured major gene-mediated pathogen resistance*
- 14:25 - 14:40 CET STRo01: **Andrea Schrader**, RWTH Aachen University, Germany. *Resilience to salinity in tomato - root transcriptome data analyses.*
- 14:40 - 14:55 CET STRo02: **Aymeric Goyer**, Oregon State University, USA. *StPIP1, a predicted PAMP-induced peptide in potato, elicits plant defenses and is associated with disease symptom severity in a compatible interaction with potato virus Y*
- 14:55 - 15:10 CET STRo03: **Saloni Mathur**, National Institute of Plant Genome Research New Delhi, India. Decoding the regulatory networks of diverse coding and noncoding RNAs towards heat stress response in tolerant and sensitive tomato cultivars from Indian sub-continent
- 15:10 - 15:25 CET STRo04: **Golam Jalal Ahammed**, Henan University of Science and Technology, China. *Nitric oxide is involved in the SlWRKY81 transcription factor- regulated stomatal movement and drought tolerance in Solanum lycopersicum L.*

15:30 - 16:00 CET Break

### Session 6: BREEDING (TECHNOLOGIES AND TRAITS)

View session recording

Session opens at 15:55 and closes at 17:30

- 16:00 - 16:25 CET BREop: **Dani Zamir,** Hebrew University of Jerusalem, Israel. *Exotic Genetic map resistance to Tomato Brown Rugose Fruit Virus (ToBRFV) to the Tobacco Mosaic Virus locus, TM1.*
- 16:25 - 16:40 CET BREo01: **Sean Fenstemaker**, Ohio State University, USA. *Using Solanum galapagense to achieve tolerance to water deficit through introgression breeding and grafting*
- 16:40 - 16:55 CET BREo02: **Yury Tikunov**, Wageningen University & Research, The Netherlands. *The genetic and functional analysis of flavor in commercial tomato: a novel FLORAL4 gene underlies a QTL for floral aroma volatiles in tomato fruit*
- 16:55 - 17:10 CET BREo03: **Jaime Prohens**, Universitat Politecnica de Valencia, Spain. *Towards the development of the first eggplant MAGIC population and QTL analysis of selected morphological traits*

Diploid potato inbreeding mini-session:

- 17:10 - 17:20 CET BREo04: **Ernst-Jan Eggers**, Wageningen University & Research, The Netherlands. *The S-Locus Inhibitor gene encodes an F-box protein with a Lectin domain and crucially enables hybrid potato breeding*
- 17:20 - 17:30 CET BREo05: **Nathalie Kaiser**, Michigan State University, USA. *Assessing the contribution of Sli to self-compatibility in North American diploid potato germplasm using KASP markers*
- 17:30 - 17:35 CET Joint Question period for diploid potato inbreeding talks

17:45 - 18:15 CET SOLIOM Meeting closing