

# XIII. International Symposium on Grapevine Breeding and Genetics

10<sup>th</sup> July - 15<sup>th</sup> July 2022

## Pioneering Wines (PIWIs) - Innovation and Tradition

### Conference Program

#### Sunday, 10.7.

#### 17:00 – 19.00 Registration

19:00 – 22:00

Welcome reception at the festival hall Landau/Pfalz

22:30

Bus transfer to the hotels

#### Monday, 11.7.

#### 08.00 Registration and Opening address

09:00

Prof. Dr. Reinhard Töpfer  
Institute for Grapevine Breeding Geilweilerhof

09:15

Dr. Bettina Hartwig  
Federal Ministry of Food and Agriculture (BMEL)

09:30

President Klaus Schneider  
German Winegrowers' Association (DWV)

09:45

President Prof. Dr. Frank Ordon  
Julius Kühn-Institute (JKI) Federal Research Centre for Cultivated Plants

**10:00**

#### **Session 1: Genetic Resources**

Moderation: Erika Maul  
Julius Kühn-Institute (JKI), Institute for Grapevine Breeding Geilweilerhof,  
Siebeldingen, Germany

10:00

#### **Keynote lecture: *Vitis* genetic resources: current challenges, achievements and perspectives**

Thierry Lacombe, AGAP, University of Montpellier, CIRAD, INRAE,  
Institut Agro, Montpellier, France

10:30

#### **Grapevine genetic resources of Armenia: molecular fingerprinting and phylogenetic relationship among wild and cultivated grapevine**

Kristine Margaryan *et al.*, Research Group of Plant Genomics, Institute of  
Molecular Biology, National Academy of Sciences RA, Yerevan, Armenia

10:50

Coffee break

11:20

#### **Genetic characterisation of the Greek grapevine collection: belated but catching up quickly**

Georgios Merkouropoulos, Hellenic Agricultural Organisation DIMITRA,  
Institute of Olive tree, Subtropical plants and Viticulture, Department of  
Vitis, Athens, Greece

11:40

#### **Analysis of Croatian wild and cultivated grapevine diversity by genotyping by sequencing**

Luka Marinov *et al.*, Institute for Adriatic Crops and Karst Reclamation, Split,  
Croatia

12:00 **Genetic diversity in 200 years old Serbian grapevine herbarium specimens**  
Carolina Royo *et al.*, Instituto de Ciencias de la Vid y del Vino  
(ICVV, CSIC-CAR-UR), Departamento de Viticultura, Logroño, Spain

12:20 **Two main distinct evolutionary stories describe the Italian grapevine assortment**  
Manna Crespan *et al.*, CREA, Research Centre for Viticulture and  
Enology, Conegliano, Italy

12:40 **Could a postglacial recolonization route be proposed for German *Vitis vinifera* L. subsp. *sylvestris* (Gmelin) Hegi, based on nuclear microsatellite markers?**  
Erika Maul *et al.*, Julius Kühn-Institute (JKI), Institute for Grapevine Breeding  
Geilweilerhof, Siebeldingen, Germany

13:00 **Lunch break**

**14:30 Session 2: Phenotyping**  
Moderation: Javier Tello  
Instituto de Ciencias de la Vid y del Vino (ICVV), Universidad de la Rioja,  
Logroño, Spain

14:30 **Keynote lecture: New and emerging digital technologies for plant phenotyping using Artificial Intelligence (AI)**  
Sigfredo Fuentes, Faculty of Veterinary and Agricultural Sciences, University  
of Melbourne, Australia

15:00 **Dissecting foliar physiology and chemical properties with integrated high-throughput phenotyping and molecular markers in grape improvement**  
Ugochukwu Ikeogu *et al.*, Cornell University, Cornell-AgriTech, Horticulture  
Section, Geneva, NY, USA

15:20 **Sensor based screening of yield relevant characteristics within grapevine breeding research**  
Hannes Engler *et al.*, Julius Kühn-Institut (JKI), Institute for Grapevine  
Breeding Geilweilerhof, Siebeldingen, Germany

15:40 **Single berry development – a new phenotyping and transcriptomics paradigm**  
Stefania Savoi *et al.*, UMR AGAP, Montpellier University, CIRAD, INRAE,  
Institut Agro-Montpellier, Montpellier, France

16:00 **Coffee break**

16:30 **Risk prediction of Botrytis bunch rot based on physical characteristics of grapes**  
Katja Herzog *et al.*, Julius Kühn-Institute (JKI), Institute for Grapevine  
Breeding Geilweilerhof, Siebeldingen, Germany

16:50 **Metabolic snapshot of grapevine-pathogen interactions through mass spectrometry imaging**  
Marisa Maia *et al.*, Laboratoire de Chimie et Physique-Approche Multi  
Échelle des Milieux Complexes (LCP-A2MC), Institut Jean Barriol (FR 2843),  
Université de Lorraine, Metz, France

17:10 **A ResNet-CNN for accurate quantification of grapevine leaf hair**  
Nagarjun Malagol *et al.*, Julius Kühn-Institute (JKI), Institute for Grapevine Breeding Geilweilerhof, Siebeldingen, Germany

17:30 **End of session**

19:00 **Dinner at the Castle Landeck**

## Tuesday, 12.7.

### 09:00 **Session 3: Abiotic Stress**

Moderation: Melané Vivier  
Department of Viticulture and Oenology, Stellenbosch University, Stellenbosch, South Africa

09:00 **Keynote lecture: Moving towards grapevine genotypes better adapted to abiotic constraints**  
Nathalie Ollat *et al.*, EGFV, Univ. Bordeaux, Bordeaux Sciences Agro, ISVV, Villenave d'Ornon, France

09:30 **Water use efficiency as a novel target for grapevine breeding programs**  
José M. Escalona *et al.*, Research Group on Plant Biology under Mediterranean Conditions, Department of Biology, University of Balearic Islands (UIB). Palma, Balearic Islands, Spain

09:50 **The rootstock control on the scion transpiration even at night**  
Davide Bianchi *et al.*, EGFV, Bordeaux Sciences Agro, INRAE, Univ. Bordeaux, ISVV, Villenave d'Ornon, France

10:10 **Genetic structure exploration and association mapping for root related traits in *V. berlandieri***  
Louis Blois *et al.*, EGFV, Bordeaux Sciences Agro, INRAE, Univ. Bordeaux, ISVV, Villenave d'Ornon, France

10:30 **Influence of vegetative propagation on epigenetic rejuvenation and its effect on vine response to stress: a multi-omic study**  
Carlos M. Rodriguez Lopez, University of Kentucky, Environmental Epigenetics and Genetics Group, Dept. of Horticulture, Lexington, USA

11:00 **Coffee break**

### 11:30 **Session 4 (1): Biotic Stress**

Moderation: Anne Fennell  
South Dakota State University, Brookings, South Dakota, USA

11:30 **Keynote lecture: Improving biotic stress resistance in grapevines: What's the path forward?**  
Silvia Vezzulli, Fondazione Edmund Mach, Research and Innovation Centre, San Michele all'Adige, Italy

12:00 **Grapevine *Rpv3*-, *Rpv10*- and *Rpv12*-mediated defense responses against *Plasmopara viticola***  
Chantal Wingerter *et al.*, State Education and Research Center of Viticulture, Horticulture and Rural Development, Institute of Plant Protection, Neustadt/Weinstraße, Germany

12:20 **Characterization of the *Rpv12* locus in a haplotype-separated grapevine genome sequence**  
Sophia Müllner *et al.*, Julius Kühn-Institute (JKI), Institute for Grapevine Breeding Geilweilerhof, Siebeldingen, Germany

12:40 **Towards marker-assisted breeding for black rot resistance: high-density linkage mapping and identification of a major QTL in the cultivar 'Merzling' (*V. rupestris* × *V. aestivalis* var. *lincecumii*)**  
Paola Bettinelli *et al.*, University of Trento, Centre of Agriculture Food Environment, Trento, Italy

13:00 Lunch break

## 14:00 Session 4 (2): Biotic Stress

Moderation: Claudio Moser  
Research and Innovation Centre, Fondazione Edmund Mach,  
San Michele all'Adige, Italy

14:00 **Functional evaluation of defensins in grapevine provide evidence that these peptides could be exploited for their stress protective roles**  
Helmien Barkhuizen and Melané A. Vivier, Stellenbosch University; South African Grape and Wine Research Institute, Department of Viticulture and Oenology, Stellenbosch, South Africa

14:20 **Identification of metabolic markers of grape infection with Esca complex disease**  
Florent Weiller *et al.*, University of Lisbon, Faculty of Sciences, BIOISI, Lisboa, Portugal

14:40 **Grape phylloxera leaf galling - traits or triggered?**  
Astrid Forneck *et al.*, University of Natural Resources and Life Sciences, Vienna (BOKU), Institute of Viticulture and Pomology, Tulln an der Donau, Austria

15:00 **Grapevine fanleaf disease: simple solution for complex problem?**  
Samia Djennane *et al.*, INRAE, Université de Strasbourg, UMR SVQV, Colmar, France

15:30 parallel Workshop Phylloxera:  
Astrid Forneck and Joachim Schmid

15:30 parallel Workshop *Vitis sylvestris*:  
**Objective: broad genetic basis of *Vitis vinifera* L. subsp. *sylvestris* (Gmelin) Hegi for deep studies**  
Erika Maul *et al.*, Julius Kühn-Institute (JKI), Institute for Grapevine Breeding Geilweilerhof, Siebeldingen, Germany

15:30 parallel Poster session

16:00 Coffee break

16:30 Poster session

17:50 End of session

## Wednesday, 13.7.

09:00 – 18:00

### Technical Tours

Visit of local wineries/DLR Rheinpfalz and Geilweilerhof

19:00

Barbeque at Geilweilerhof (outdoors)

## Thursday, 14.7.

09:00

### Session 5: Grapevine Breeding

Moderation: Bruce Reisch

School of Integrative Plant Science, Cornell AgriTech, Cornell University, Geneva, New York, USA

09:00

#### **Keynote lecture: Grapevine breeding: progress, innovation, and opportunity**

Peter Cousins, E. & J. Gallo Winery, Modesto, CA, USA

09:30

#### **Agronomical behaviour of 21 new disease resistant winegrape varieties grown in northeast Italy**

Luigi Bavaresco *et al.*, Università Cattolica S. Cuore, Dept. Sustainable Crop Production, Pomology & Viticulture section, Piacenza, Italy

09:50

#### **The differences in resistance levels of different FRCs and the impact of their deployment on fungicide use in viticulture**

Birgit Eisenmann *et al.*, State Education and Research Centre of Viticulture, Horticulture and Rural Development, Institute of Plant Protection, Neustadt/Weinstraße, Germany

10:10

#### **Contributions of the *VitisGen2* project to grapevine breeding and genetics**

Bruce Reisch *et al.*, Cornell University, Cornell-AgriTech, Horticulture Section, Geneva, NY, USA

10:30

#### **Producing and (epi)genotyping a large collection of intravarietal diversity for grapevine improvement**

Darrell Lizamore *et al.*, Bragato Research Institute, Grapevine Improvement Team, Lincoln, New Zealand

10:50

Coffee break

11:20

#### **Exploring clonal variation in ‘Riesling’**

Kai P. Voss-Fels *et al.*, Hochschule Geisenheim University, Department of Grapevine Breeding, Geisenheim, Germany

11:40

#### **Reduced bunch compactness in somatic variants of ‘Tempranillo’ relate to genome structural variation and the sex locus**

Noelia Alañon *et al.*, Instituto de Ciencias de la Vid y del Vino (ICVV, CSIC-CAR-UR), Departamento de Viticultura, Logroño, Spain

12:00

#### **Genetic analysis of berry, flower and seed traits in two ‘Tempranillo Tinto’ populations: Influence of the Sex locus**

Cristina Manso-Martínez *et al.*, Instituto de Ciencias de la Vid y del Vino (ICVV), Logroño, Spain

12:20 **Genome Wide Association Study using table grape breeding families provide new QTLs for berry, seed and cluster traits**  
Tiago Carvalho *et al.*, Centro de Biotecnología y Genómica de Plantas (CBGP, UPM-INIA) Universidad Politécnica de Madrid (UPM) - Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, Madrid, Spain

12:40 **Lunch break**

**14:00 Session 6: Novel Technologies**  
Moderation: Patricio Hinrichsen  
Instituto de Investigaciones Agropecuarias, INIA-La Platina, Santa Rosa, Santiago, Chile

14:00 **Keynote lecture: Genome editing in grapevine: a great opportunity or only a dream?**  
Riccardo Velasco, Consiglio per la Ricerca in Agricoltura e L'Analisi dell'Economia, Agraria-Centro di Ricerca Viticoltura ed Enologia (CREA-VE), Turi, Italy

14:30 **Breeding for grapevine downy mildew resistance via gene editing**  
Lisa Giacomelli *et al.*, Fondazione Edmund Mach, Research and Innovation Centre, San Michele all'Adige, Italy

14:50 **High quality phased assembly of grape genome offer new opportunities in chimera detection**  
Victoria Sichel *et al.*, UMR AGAP Institut Univ. Montpellier, CIRAD, INRAE, Institut Agro, Montpellier, France

15:10 **Genomic and phenomic predictions for accelerating grapevine breeding**  
Charlotte Brault *et al.*, UMT Geno-Vigne®, IFV-INRAE-Institut Agro, Montpellier, France

15:30 **Keynote lecture (Session 7): Genomes as research tools: from loci to candidate genes**  
Dario Cantu, Department of Viticulture and Enology, University of California, Davis, CA, USA

16:00 **Coffee break**

16:30 parallel **Poster session**

16:30 parallel **Workshop PIWI:**  
**Is a systemic innovation approach possible with PIWI?**  
Reinhard Töpfer and Oliver Trapp  
Julius Kühn-Institute (JKI), Institute for Grapevine Breeding Geilweilerhof, Siebeldingen, Germany

17:30 **End of session**

19:00 **Conference Dinner (Hohenstaufensaal, Annweiler)**

Friday, 15.7.

09:00

## Session 7: Big Data

Moderation: Mario Pezzotti

Department of Biotechnology, University of Verona, Verona, Italy

09:00

### **A large chimeric deletion associates with impairment of cuticle development in a dark berry somatic variant of 'Tempranillo Tinto'**

Pablo Carbonell-Bejerano *et al.*, Instituto de Ciencias de la Vid y del Vino (ICVV, CSIC-CAR-UR), Logroño, Spain

09:20

### **Do we need to consider grape phyllosphere microbiome in breeding schemes?**

Patrice This *et al.*, UMR AGAP Institut, Univ. Montpellier, CIRAD, INRAE, Institut Agro Montpellier, Montpellier, France

09:40

### **Analysis of genomic prediction across populations in grapevine (*Vitis vinifera* L.)**

Komlan Avia *et al.*, Université de Strasbourg, INRAE, SVQV UMR-A 1131, Colmar, France

10:00

### **Genomics and bioinformatics strategies to tackle diversity and domestication in grapevine**

Sara Freitas *et al.*, CIBIO, Centro de Investigação em Biodiversidade e Recursos Genéticos, InBIO Laboratório Associado, Universidade do Porto, Vairão, Portugal

10:20

### **Gene functional characterization assisted by genome-wide TF-binding site interrogation: Grapevine as a case of study**

José Tomás Matus, Institute for Integrative Systems Biology (I2SysBio), Universitat de Valencia-CSIC, Spain

10:40

Poster awards

11:10

Coffee break

11:40

### **Genetic characterization of the phylloxera resistance QTL Rdv1 in both haplotypes of the grapevine roostock variety 'Börner'**

Bianca Frommer *et al.*, Bielefeld University, Chair of Genetics and Genomics of Plants, Faculty of Biology and Center for Biotechnology (CeBiTec), Bielefeld, Germany

12:00

### **Virulence-related metabolism may be activated in *Botrytis cinerea* mostly in the interaction with tolerant green grapes that remain largely unaffected**

Flávio Soares *et al.*, BioISI - Biosystems and Integrative Sciences Institute, Faculty of Sciences, University of Lisbon, Campo Grande, Lisboa, Portugal

12:20

### **The real sour grapes: genetic loci, genes, and metabolic changes associated with grape malate levels**

Noam Reshef *et al.*, Department of Food Science, Cornell University, Ithaca, NY, USA

12:40

Lunch break

13:30 Workshop INTEGRAPE:  
**Beyond COST Action INTEGRAPE: The Grapevine Genomics Encyclopedia Initiative**  
José Tomás Matus *et al.*, The GRAPEDIA Consortium

**14:30 Session 8: Grape and Wine Quality**  
Moderation: Christian Zörb  
University of Hohenheim, Institute for Crop Sciences, Quality of Plant Products and Viticulture, Stuttgart-Hohenheim, Germany

14:30 **Keynote lecture: Oenological traits as targets for grape breeding**  
Ulrich Fischer, DLR Rheinpfalz, Institute for Viticulture and Enology, Neustadt/Weinstraße, Germany

15:00 **Differences on the transcriptomic profiles explain clonal phenotypic variation in *Vitis vinifera* L. 'Malbec'**  
Luciano Calderón *et al.*, Instituto de Biología Agrícola de Mendoza (CONICET-UNCuyo), GenoVid, Chacras de Coria, Argentina

15:20 **Does the introgression of disease resistance genes impacts agro-oenological traits in grapevine varieties?**  
Elsa Chedid *et al.*, SVQV, University of Strasbourg, INRAE, Colmar, France

15:40 **An independent haplotype responsible for white berry phenotype in *Vitis vinifera* arose from a large deletion at the berry color locus**  
Jean-Sébastien Reynard, Agroscope, Viticulture, Pully, Switzerland

16:00 **Genetic mapping of organic acids in a F1 white wine population with high variation in acidity and maturity date**  
Florian Schwander *et al.*, Julius Kühn-Institut (JKI), Institute for Grapevine Breeding Geilweilerhof, Siebeldingen, Germany

16:20 **Closing remarks and farewell**  
Oliver Trapp, Julius Kühn-Institut (JKI), Institute for Grapevine Breeding Geilweilerhof, Siebeldingen, Germany

16:30 Coffee break

17:30 End of symposium