

PROGRAMME

3rd EPI-CATCH CONFERENCE

CA19125 - EPIGENETIC MECHANISMS OF CROP ADAPTATION TO CLIMATE CHANGE

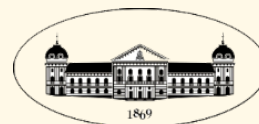
30 MAY – 1 JUNE 2023

SOFIA, BULGARIA



CONFERENCE VENUE:

**BULGARIAN ACADEMY OF SCIENCES
'PROF. MARIN DRINOV' HALL
15 NOEMVRI STR., No1
SOFIA, BULGARIA**



LOCAL ORGANISER:

**INSTITUTE OF PLANT PHYSIOLOGY
AND GENETICS**



ORGANISING COMMITTEE

FEDERICO MARTINELLI - University of Florence, Italy
VALYA VASSILEVA - IPPG, Bulgarian Academy of Sciences, Bulgaria
MICHAL LIEBERMAN-LAZAROVICH - Volcani Center, Israel
STEPHANE MAURY - University of Orléans, France
GLORIA PINTO - University of Aveiro, Portugal
NAAMA SEGAL - National Center for Mariculture Research, Israel
ELENI TANI - Agricultural University of Athens, Greece
PILAR TESTILLIANO - CIB Margarita Salas-CSIC, Spain
SOTIRIOS FRAGKOSTEFANAKIS - Goethe University Frankfurt, Germany
VELIMIR MLADENOV - University of Novi Sad, Serbia

Dear Conference Participants,

A warm welcome to the 3rd EPI-CATCH Conference in the vibrant city of Sofia, Bulgaria!

EPI-CATCH is a COST action focused on advancing the understanding of epigenetic mechanisms underlying plant adaptation to environmental stresses driven by climate change. Our primary objective is to establish a pan-European framework for networking in the field of plant epigenetics. Through collaborative efforts, we aim to define and develop innovative knowledge and methodologies for investigating these epigenetic mechanisms.

EPI-CATCH operates through several Working Groups that focus on specific areas of research and collaboration:

- WG1: Plant stress epigenetic responses**
- WG2: New frontiers and concepts**
- WG3: Methodologies and workflows**
- WG4: Dissemination and communication**

The 3rd EPI-CATCH Conference presents an exceptional opportunity for researchers to share, discuss, connect and stay updated on the latest research in plant epigenetics. The conference will encompass several sessions focused on key aspects in the field:

1. Plant epigenetic responses to environmental stresses;
2. New concepts and frontiers in epigenetics;
3. Advances and approaches in plant epigenetics for crop improvement.

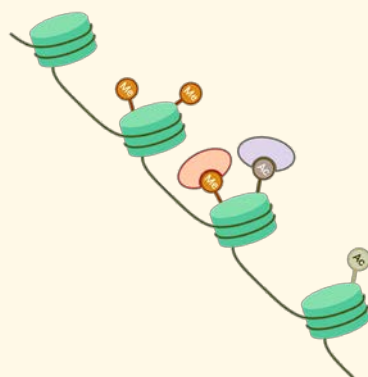
Following the conference, a Management Committee meeting will be held to review the activities throughout the third year of the Action. This meeting will also plan other EPI-CATCH events, such as training schools, workshops, and Short-Term Scientific Missions.

We wish all the attendees an inspiring conference and productive discussions!

TUESDAY, MAY 30TH

13:00-14:00	REGISTRATION
14:00-14:10	OPENING CONFERENCE – Welcome by the Chair of EPI-CATCH Federico MARTINELLI
14:10-14:50	KEYNOTE CONFERENCE SPEAKER Heribert HIRT, KAUST, Saudi Arabia; Agriculture and climate change: challenges and possibilities
14:50-18:50	WG1 SESSION. PLANT EPIGENETIC RESPONSES TO ENVIRONMENTAL STRESSES CHAIRPERSONS: <i>Stephane MAURY & Michal LIEBERMAN LAZAROVICH</i>
14:50-15:20	Keynote: Isabel BAURLE, University of Postdam, Germany; Chromatin-based mechanisms of environmental stress memory
15:20-15:40	Jake HARRIS, University of Cambridge, UK; Chromatin features of pathogen priming in <i>Arabidopsis thaliana</i>
15:40-16:00	German MARTINEZ, SLU, Sweeden; Epigenetic dynamics in response to biotic stress
16:00-16:20	Conchita ALONSO, Doñana Biological Station, CSIC, Spain; Plant epigenetics: a contribution to phenotypic variation in changing environment
16:20-16:42	Flash talks
16:20-16:28	Alexandre DUPLAN, University of Orléans INRAE, France; Trees short-time and inter-annual epigenetic memories in responses to drought-rewatering cycles
16:28-16:36	Marco CATONI, University of Birmingham, UK; Characterization of the determinants of epigenetic traits to improve crops
16:36-16:42	Teodora SOTIROVA, Joint Innovation Centre, Bulgarian Academy of Sciences; Support for internationalization, technology transfer and access to finance

16:42-17:15	<i>Coffee break and poster viewing</i>
17:15-17:45	Keynote: Martin CRESPI, Institute of Plant Sciences Paris Saclay, France; Long non-coding RNAs in epigenetic regulation triggered by the environment
17:45-18:05	Iris SAMMARCO, Institute of Botany, Czech Academy of Sciences, Czechia; Understanding the adaptive potential of natural epigenetic variation using wild strawberry plants
18:05-18:25	Stéphane MAURY, University of Orléans, INRAE, France; Epigenomics in plant populations
18:25-18:50	<i>Flash talks</i>
18:25-18:33	Golan MILLER, Institute of Plant Sciences, Agricultural Research Organization, Volcani Center, Israel; The tomato <i>ddm1b</i> mutant links heat stress tolerance with DNA methylation-mediated transcriptional regulation
18:33-18:41	Fabio FERRARIO, Institute of Plant Sciences Paris-Saclay IPS2, University of Paris, France; Roles of alternative splicing in the mechanisms of thermotolerance acquisition in tomato
18:41-18:50	Q&A
19:00-20:30	WELCOME COCKTAIL

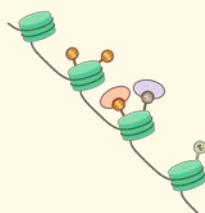


WEDNESDAY, May 31st

09:00-17:30	WG2 SESSION. NEW CONCEPTS AND FRONTIERS IN EPIGENETICS CHAIRPERSONS: Eleni TANI & Sotirios FRAGKOSTEFANAKIS
09:00-09:30	Keynote: Michele MORGANTE, University of Udine, Italy; Plant pan genomes, transposable elements and epigenetic variation
09:30-10:00	Keynote: Sjon HARTMAN, University of Freiburg, Germany; Remember the rain: unravelling how plants encode and use flooding stress memory
10:00-10:20	Federico MARTINELLI, University of Florence, Italy; Investigating mechanisms of drought tolerance in chickpea
10:20-10:40	Miroslav BARÁNEK, Mendel University in Brno, Czechia; The influence of different stress conditions on DNA methylation and mobilome of grapevine
10:40-11:10	<i>Coffee break and poster viewing</i>
11:10-11:30	Norbert HIDVÉGI, University of Debrecen, Hungary; The <i>XTH</i> gene expression changes in tomato and potato under environmental mechanical forces (rainfall, wind and touch)
11:30-11:50	Melissa MAGEROY, Institute for Bioeconomy Research, Norway; Molecular underpinnings of methyl jasmonate induced resistance in Norway spruce (<i>online</i>)
11:50-12:55	<i>Flash talks</i>
11:50-11:58	Lyuben ZAGORCHEV, Sofia University „St. Kliment Ohridski“, Bulgaria; DNA methylation is involved in the control of <i>Cuscuta campestris</i> parasitism
11:58-12:06	Arsheed Sheikh, DARWIN21, KAUST, Saudi Arabia; Microbe-induced drought tolerance by ABA-mediated root architecture and epigenetic reprogramming
12:06-12:14	Vinay KUMAR, Modern College of Arts, Science and Commerce, Savitribai Phule Pune University, India; Epigenetic regulation of combined heat and salinity stress responses of rice cultivars
12:14-12:22	Pawan KUMAR, Institute of Plant Sciences, Agricultural Research Organization, Volcani Institute, Israel; Epigenetic modifications related to potato skin russeting

12:22-12:30	Magda GRABSZTUNOWICZ, Poznań Adam Mickiewicz University, Poland; Histone posttranslational modifications - the relevant player in survival-cell death switch during senescence in barley
12:30-12:38	Sofia ALVES, LEAF-Linking Landscape, Environment, Agriculture and Food Research Center, Universidade of Lisbon, Portugal; Distribution of epigenetic marks in different development stages of buds from <i>Castanea sativa</i> Mill
12:38-12:46	Saqlain HAIDER, University of Galway, Ireland; PWWP DOMAIN INTERACTOR OF POLYCOMBS (PWO) proteins and their evolution in land plants
12:46-12:55	Q&A
12:55-14:00	Lunch
14:00-14:30	Keynote: Alma BALESTRAZZI, University of Pavia, Italy; Boosting the seed repair response: a reliable solution for climate-ready crops
14:30-15:00	Keynote: Filippos A. ARAVANOPOULOS, Aristotle University of Thessaloniki, Greece; How fast is perennial plant adaptation to environmental stress and what role can epigenetics play?
15:00-15:20	Eirini KAISERLI, University of Glasgow, UK; Transcriptional regulation of Arabidopsis adaptive responses to light and temperature (<i>online</i>)
15:20-17:30	Flash talks
15:20-15:28	Beáta STREJČKOVÁ, Institute of Experimental Botany, Czech Academy of Sciences, Czechia; Bridging the gap between structural variability and function of <i>VERNALIZATION1</i> in cereals
15:28-15:36	Eleni AVRAMIDOU, Aristotle University of Thessaloniki, Institute of Applied Bioscience, CERTH, Greece; Contrasting anti-nutritional content <i>V. faba</i> L. genotypes altered their epigenetic levels of specific genes when grown in different climatic regions of Greece
15:36-15:44	Aleksandra RADANOVIĆ, Institute of Field and Vegetable Crops, Serbia; Epigenetic drivers of sunflower drought tolerance
15:44-15:52	Christina SKODRA, Aristotle University of Thessaloniki, Greece; Disclosing the molecular mechanism of superficial scald in 'Granny Smith' apple through the combination of multi-omics and functional analyses
15:52-16:00	Angelo SANTINO, ISPA-CNR, Institute of Science of Food Production, Italy; Investigating the epigenetic effects of the overexpression of transcription factors involved in tomato fruit quality

16:00-16:08	Grigorios MANIATIS, Agricultural University of Athens, Greece; Genetic and epigenetic responses of two autochthonous grapevine varieties from the 'Epirus' region of Greece with differential reactions upon consecutive drought stress.
16:08-16:16	Mamadou DIA SOW, INRAE/UCA, France; Tracing 100 million years of grass genome evolutionary plasticity
16:16-16:24	Raquel SANTOS, University of Lisbon, Portugal; EpiCORK - Unveiling the role of DNA methylation in periderm formation (online)
16:24-16:32	Carlos MARFIL, National Institute of Agricultural Technology (INTA), Argentina; Environmentally induced epigenetic variation in the emblematic Argentine variety Malbec cultivated in contrasting vineyards (online)
16:32-16:40	Aliki KAPAZOGLOU, Centre for Research and Technology Hellas (CERTH), Hellenic Agricultural Organization-Dimitra, Greece; Drought induces variation in the DNA methylation status of the barley <i>HvDME</i> gene (online)
16:40-16:48	Maria De BENEDICTIS, Institute of Sciences of Food Production, C.N.R., Unit of Lecce, Italy; Endoplasmic reticulum quality control and cadmium resistance: a link to increase heavy metal tolerance in <i>Arabidopsis thaliana</i> (online)
16:48-16:56	Jana KAČÍROVÁ, Institute of Plant Genetics and Biotechnology, Slovak Academy of Sciences, Slovakia; Identification of DNA methyltransferases and demethylases in <i>Amaranthus cruentus</i> L. (online)
16:56-17:04	Monica LABELLA-ORTEGA, University of Cordoba, Spain; MSAP-Seq comparative analysis of the DNA methylation pattern among <i>Quercus ilex</i> developmental stages (online)
17:04-17:12	Yuanhao Lei, University of Birmingham, UK; Prove of concept of TEs role in gene evolution (online)
17:12-17:30	Q&A
17:30-20:00	<i>Sightseeing trip/walk</i>
20:00-23:00	<i>SOCIAL DINNER</i>



THURSDAY, June 1st

09:00-13:05 **WG3 SESSION. ADVANCES AND APPROACHES IN PLANT EPIGENETICS FOR CROP IMPROVEMENT**

CHAIRPERSONS: Valya VASSILEVA & Pilar TESTILLIANO

09:00-09:30 **Keynote: Elena CARO, Polytechnic University of Madrid (UPM), Spain;** TGRooZ, a system to study the effect of heat mimicking the conditions plants face in natural fields: the root ecosystem affects plant functionality

09:30-9:50 **Carl GUNNAR, NIBIO, Norway;** Epigenetic memory in response to temperature conditions during asexual and sexual propagation

09:50-10:10 **Sotirios FRAGKOSTEFANAKIS, Goethe University Frankfurt, Germany;** Transcriptional regulation of heat stress response and thermotolerance in tomato

10:10-11:10 **Flash talks**

10:10-10:18 **Daniela CORDEIRO, University of Coimbra, Portugal;** H3K9 methylation patterns during embryonic competence expression in tamarillo (*Solanum betaceum* Cav.)

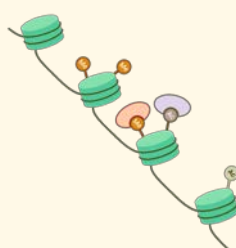
10:18-10:26 **Elena CARNEROS, Center of Biological Research Margarita Salas CIB-CSIC, Spain;** Short Term Scientific Mission: Analyses of ChIP-seq in Brassicaceae and applications in pollen development and microspore embryogenesis

10:26-10:34 **Phoebe SWIFT, School of Biological Sciences, University of Birmingham, UK;** Tree age determines epigenetic imprinting of ash dieback disease

10:34-10:42 **Kateřina KADUCHOVÁ, Institute of Experimental Botany, Czech Academy of Sciences, Czechia;** Towards understanding of spatial in vivo dynamics of mitotic division in barley (*Hordeum vulgare*)

10:42-10:50 **Katie JEYNES-CUPPER, School of Biosciences, University of Birmingham, UK;** RNAllocate: An R package for integrative identification of small RNA movement from sRNA-sequencing experiments using plant grafting of two genotypes.

10:50-10:58	Elżbieta RUDY, Poznań Adam Mickiewicz University, Poland; Analysis of RNA N ⁶ -Methyladenosine (m ⁶ A) responds to accompanying dark-induced senescence in barley leaves
10:58-11:10	Q&A
11:10-11:35	<i>Coffee break and poster viewing</i>
11:35-12:05	Keynote: Philippe GALLUSCI, University of Bordeaux, France; DNA methylation remodelling in grapevine triggered by nutritional and environmental stresses
12:05-12:25	Aleš PEČINKA, UEB, Czech Academy of Sciences, Czechia; Towards understanding chromosome organization and epigenetic regulation in barley
12:25-12:45	Judit DOBRÁNSZKI, University of Debrecen, Hungary; DNA methylation and mRNA transcription background of enhanced seedling growth after seed ultrasonication
12:45-13:05	<i>Flash talks</i>
12:45-12:53	Pedro CREVILLÉN, Polytechnic University of Madrid (UPM), Spain; H3K27me3 demethylases fine-tune <i>FLC</i> clade gene expression to regulate flowering time in Arabidopsis and related Brassica crops
12:53-13:00	Vasilissa MANOVA, Institute of Plant Physiology and Genetics, Bulgarian Academy of Sciences, Bulgaria; Modulation of DNA damage repair genes in wheat genotypes exposed to drought stress (<i>onlne</i>)
13:00-13:05	Q&A
13:05-13:35	EPI-CATCH WG meetings (WG1-WG4)
13:35-13:45	OFFICIAL CLOSING of the CONFERENCE
13:45-14:40	<i>Lunch</i>
14:40-16:30	EPI-CATCH 3rd Management Committee Meeting



CONTACT DETAILS

**Federico MARTINELLI - EPI-CATCH
coordinator**

Phone: +3933-1803-9998 /+3905-5457-4743

E-mail: *federico.martinelli@unifi.it*

Valya VASSILEVA - Local organiser

Phone: +359-887-217-112

E-mail: *valyavassileva@bio21.bas.bg*

Website: <http://61e6e24bcea16.site123.me>

LOGISTIC SUPPORT:

**JOINT INNOVATION CENTRE
BULGARIAN ACADEMY OF SCIENCES**