

ESHG Course Translational Epigenetics in Precision Medicine

18-21 October
2025

Holiday Inn
Telavi, Georgia



PROGRAMME



geneticsgeorgia.org
tsmu.edu

Course Organizers

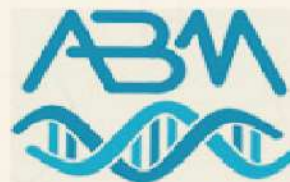
Georgian Society of Medical Genetics and Epigenetics (GSMGE)
Tbilisi State Medical University (TSMU)



Course has been accredited
by the European Accreditation Council for Continuing Medical Education (EACCME®)
for a maximum of **18.5** European CME credits (ECMEC®s).

Course sponsorship & support

We thank the following for their contribution to the course





The aim of the course is:
to train participants in the fundamental aspects of epigenetic mechanisms and their dysregulation in human diseases, with a focus on recent genome-wide technological advances and clinical applications in diagnostics and epigenome therapeutics.



Eka Kvaratskhelia
TSMU, Tbilisi, Georgia



Tinatin Tkemaladze
TSMU, Tbilisi, Georgia



Sofia Douzgou Houge
Haukeland University Hospital
Bergen, Norway

Course Directors:

Eka Kvaratskhelia, TSMU, Tbilisi, Georgia

Tinatin Tkemaladze, TSMU, Tbilisi, Georgia

Sofia Douzgou Houge, Haukeland University Hospital, Bergen, Norway

Honorary Chair: Elene Abzianidze

Local Organizing committee:

Nino Pirtskhelani, Ketevan Kankava, Bela Partskhaladze, Sandro Surmava

Venue: Holiday Inn; 2 Rustaveli Avenue, 2200 Telavi, Georgia

Course website: <http://geneticsgeorgia.org/en/epigenetics-course/>

Email: epicourse@tsmu.edu

TOPICS

DAY 1

Basic Concepts of Epigenetics

DAY 2

Cancer Epigenetics

DAY 3

Epigenetics in rare Diseases

DAY 4

Environmental Epigenetics
and its Implication on
Common Diseases



Clinical case abstract submission:

Participants will be encouraged to submit clinical cases. A limited number of cases will be selected by the program committee for presentation and discussion during the course.

ACCOMMODATION Welcome Dinner

Holiday Inn Telavi

2 Rustaveli Avenue,
2200 Telavi, Georgia



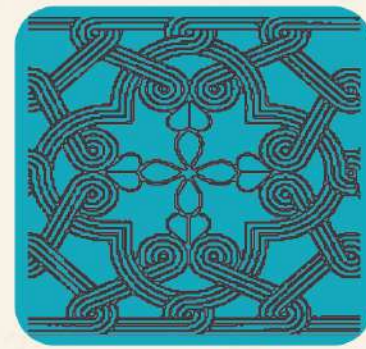
Wine tour in Tsinandali Estate

Tsinandali Winery is located in the winegrowing region of Kakheti in Georgia, surrounded by panoramic settings and charming vineyards. Apart from making exceptional wines, the winery holds an in-house museum and an 18-hectare park. Guests can enjoy premium wine tasting in a beautiful setting. The estate also hosts exhibitions, music festivals, and scientific conferences. Explore the Tsinandali estate and its winery, picturesque gardens, wine cellars, hotel, and café. Some of the oldest vintages are stored in Princely Oenothèque historical for visitors to discover.



Gala Dinner:
Zuzubmo Resort&Spa
Georgian University Street,
Zuzumbo,
2200 Telavi, Georgia



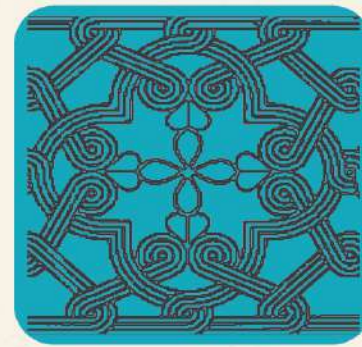
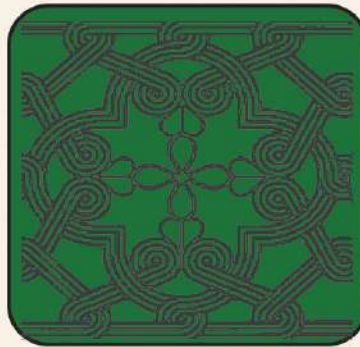


PROGRAMME

DAY 1 18/10

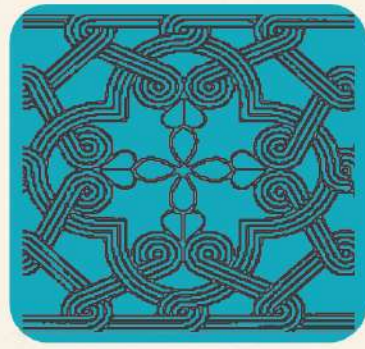
Basic Concepts of Epigenetics

10.45	Registration	
11.00-11.45	Opening remarks; Course overview	Eka Kvaratskhelia Tinatin Tkemaladze Sofia Douzgou Houge
11.45-12.30	Epigenetic mechanisms: DNA methylation and demethylation; histone modifications and nucleosomes	Sebastian Alvarado Queens College (CUNY), New York City, US
12.30-13.00	Coffee break	
13.00-13.45	DNA methylation epigenatures fundamentals: from molecular profiles to AI biomarkers	Bekim Sadikovic London Health Sciences Centre, ON, Canada
13.45-14.30	Mechanisms of chromatin remodeling, ATP-dependent chromatin remodeling, chromatin remodeling complexes	Sebastian Alvarado Queens College (CUNY), New York City, US
14.30-15.30	Lunch break	
15.30-16.15	Genomic imprinting in mammals; Dosage compensation: X inactivation; Epigenetic regulation in stem cells and cell reprogramming	Maral Tajerian Queens College (CUNY), New York City, US
16.15-17.00	Genome-wide methylation detection and epigenature analysis using PacBio long-read sequencing	Christian Gilissen The Radboud University Medical Center, Nijmegen, the Netherlands
17.00-17.30	Coffee break	
17.30-18.15	Epigenetic Regulation by Non-Coding RNAs: Focus on MicroRNAs	Eka Kvaratskhelia Tbilisi State Medical University, Tbilisi, Georgia
19:00	Welcome Dinner	



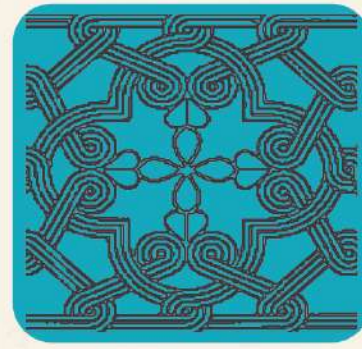
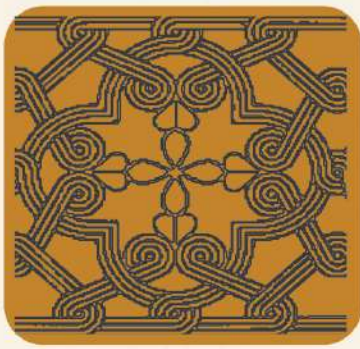
DAY 2 19/10
Cancer Epigenetics

09.00-09.45	Introduction to Cancer Epigenetics; Innovative epigenomic approaches in cancer diagnosis and treatment	Meir Shamay The Azrieli Faculty of Medicine Bar-Ilan University, Israel
09.45-10.30	Genome-wide methylation profiling for diagnosis and prognosis in childhood leukemia	Jessica Nordlund Uppsala University, Uppsala, Sweden
10.30-11.00	Coffee break	
11.00-11.45	Epigenetics drug design; Epigenetic therapy: DNA methyltransferases inhibitors; Histone deacetylase inhibitors (HDACi)	Meir Shamay The Azrieli Faculty of Medicine Bar-Ilan University, Israel
11.45-12.30	Epigenetic epidemiology: Epigenetics in EWAS and DOHaD	Karin Michels UCLA Fielding School of Public Health, Los Angeles, California, US
12.30-13.30	Lunch break	
13.30-14.15	Genome Instability and Cancer: The Role of Repetitive Element Methylation	Ketevan Kankava Tbilisi State Medical University, Tbilisi, Georgia
15.00-18.00	Going to Food and Wine tour	



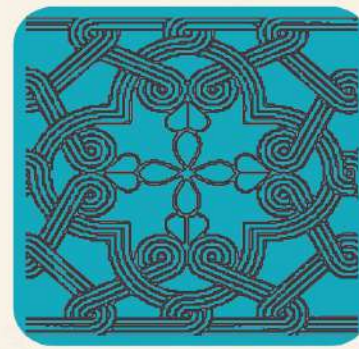
DAY 3 20/10
Epigenetics in rare Diseases

09.00-09.45	Genetics meets epigenetics in rare diseases; Mendelian diseases with epigenetic machinery: Disease Classification/Characterization	Siddharth Banka Manchester University NHS, Manchester, UK
09.45-10.30	Orchestrating genetics and epigenetics from a clinical perspective: lessons learned from Rubinstein-Taybi and Cornelia de Lange syndromes and beyond	Tinatin Tkemaladze Tbilisi State Medical University, Tbilisi, Georgia
10.30-11.00	Coffee break	
11.00-11.45	The epigenetics of dysmorphology: Overgrowth and growth restriction syndromes	Sofia Douzgou Houge Haukeland University Hospital, Bergen, Norway
11.45-12.30	Clinical Case Discussion: Peculiarities of inheritance pattern of Angelman syndrome	Tinatin Tkemaladze Tbilisi State Medical University, Tbilisi, Georgia
12.30-13.30	Lunch break	
13.30-14.30	Workshop: Clinical applications of DNA methylation epigenatures in rare diseases.	Bekim Sadikovic London Health Sciences Centre, UK
14.30-15.00	The complexity of Beckwith-Wiedemann and Silver-Russell syndromes: Anticipation and mixed phenotypes	Gunnar Douzgos Houge University of Bergen, Norway
15.00-15.30	Coffee break	



Day 3 20/10 (continued) Clinical case discussion; Selected abstracts		Course participants
15.30-15:50	Novel <i>ZBTB18</i> variant in a patient with developmental delay and dysmorphic features suspected of Rubinstein-Taybi syndrome	Anastasia Sukhiashvili Tbilisi State Medical University, Tbilisi, Georgia
15:50-16:10	Where is the border between genetics and epigenetics? Hunting for a hidden mutation	Elene Melikidze Tbilisi State Medical University, Tbilisi, Georgia
16:10-16:30	Angelman or not Angelman? What to do next	Megi Lartsuliani Tbilisi State Medical University, Tbilisi, Georgia
16:30-17:50	Q&A Session	Discussion with Faculty Panel
18.00	Gala Dinner	





DAY 4 21/10

Environmental Epigenetics and Its Implication on common diseases

09.00-09.45	Genetics, epigenetics and environment; Environmental epigenomics and disease susceptibility; Aging and the epigenetic clock	Gunnar Douzgos Houge University of Bergen, Norway
09.45-10.30	Epigenetic mechanisms of brain plasticity in the context of peripheral trauma	Maral Tajerian Queens College (CUNY), New York City, US
10.30-11.00	Coffee break	
11.00-11.45	Epigenetics in complex diseases: Cardiovascular diseases	Nino Pirtskhelani Tbilisi State Medical University, Tbilisi, Georgia
11.45-12.30	Statistical approaches in epigenetic studies	Inga Prokopenko School of Biosciences, University of Surrey, Guildford, Surrey, UK
12.30-13.30	Lunch break	
13.30-14.15	Epigenetics, Nutrition, and Metabolic Health	Tamar Kvaratskhelia New Vision University, Tbilisi, Georgia
14.15-15.00	Translational Epigenetics: Animal model adoption for translational and basic research	Sebastian Alvarado Queens College (CUNY), New York City, US
15.00-15.30	Coffee break	
15.30-16.30	Written test and Feedback	
16.30-16.45	Closing remarks	Eka Kvaratskhelia Tinatin Tkemaladze Sofia Douzgou Houge