



«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE  
INTERNATIONAL SCHOOL ON  
BIOELECTROMAGNETISM «ALESSANDRO CHIABRERA»

11<sup>th</sup> Course: “Advances in Electroporation-Based Therapy: from Principles to Clinical Applications”

Erice (Sicily, Italy): May 2 to 7, 2025

Directors of the Course: Micaela Liberti and Rafael Davalos

PROGRAM (25<sup>th</sup> April 2025)

**DAY 1 – Friday, May 2<sup>nd</sup>**

Theme: BASICS

**Morning**

09:00	Welcome to Participants and Brief Overview of The School	F. Bersani, M.R. Scarfi
09:20	Welcome from BioEM Society	A. Peyman, M. Liberti
09:25	Welcome from ISEBTT Society	Emanuela Signori
09:30	Introduction and Course Opening	R. Davalos, M. Liberti
09:40	An Introduction to the Pulsed Electric Fields Delivery: from Principles to Applications	Lluis M. Mir
10:40	COFFEE BREAK and Posters Hang up	
11:10	Biophysical Mechanisms of Electroporation at the Cellular and Molecular Level	Lea Rems

12:10 LUNCH

**Afternoon**

14:00	Reversible Effects of the Pulsed Electric Fields Delivery: What Happens to the Membranes?	Lluis M. Mir
14:30	Basics of Irreversible Electroporation in Tissue	Rafael Davalos
15:00	COFFEE BREAK	
15:30	Results of Cell Response for Transfection	Maja Cemazar
16:00	Electroporation: In Vitro and In Vivo Immune Response	Emanuela Signori
16:30	Delivery of Pulsed Electric Fields: a Platform Technology with Multiple Applications	Lluis M. Mir

**DAY 2 – Saturday, May 3<sup>rd</sup>**

Theme: ELECTRIC FIELD

**Morning**

09:00	Introduce the Day: Considerations for Electrode Design and Field Distribution for EP Therapy	Rafael Davalos
09:20	Electric Field Generators and Electrodes for Reversible Electroporation in Drug Diffusion	Micaela Liberti
09:50	Electric Field Generators and Electrodes for IRE and PFA	Edward Jacobs
10:20	COFFEE BREAK	
10:50	Collateral Effects of Electroporation: Heating, Electrochemical Reactions, and Electrical Stimulation	Antoni Ivorra
11:30	Electric Field Coupling and Modeling	Stefania Romeo

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12:10 *LUNCH*

**Afternoon**

14:00	Impact of Protocol Parameters on the Efficacy of Electroporation	Roberta Fusco
14:40	<i>COFFEE BREAK</i>	
15:10	Liver Tumor Ablation by Electroporation: the Promising Role of Computational Science in the Operating Room	Clair Poignard
15:50	AI for Modeling and Treatment Planning	Edward Jacobs
16:30	Electric Pulse Generators and Electrodes for Gene Electrotransfer	Richard Heller

**DAY 3 – Sunday, May 4<sup>th</sup>**

Theme: LABWORK AND INTERACTIVE FORUM

**Morning**

09:00	Treatment Planning Strategies: Clinical Cases	Roberta Fusco
09:40	Labwork 1: Hands on – Electric Field Calculation on a Basic EP Configuration (by the use of Sim4Life Lite, Zurich MedTech)	Micaela Liberti
10:40	<i>COFFEE BREAK</i>	
11:10	Labwork 2: Hands on – Electric Field Calculation on a Case Study (incorporating CT/MRI images) with Professional Software	Roberta Fusco

12:30 *LUNCH*

**Afternoon**

14:00	Labwork 3: Hands-On - Electroporation of Vegetable Tissue with Devices from Industry Sponsors	Roberta Fusco
15:30	<i>COFFEE BREAK</i>	
16:00	Industry Panel: State of the Art, Gaps and Challenges in Technological Development	All Speakers All Sponsors Moderator: R. Cadossi

**DAY 4 – Monday, May 5<sup>th</sup>**

Theme: CLINICS

**Morning**

09:00	Introduce the Day: Different Clinical Applications, Main Results, and Emerging Issues	Gregor Sersa
10:00	Clinical Applications: ECT	Julie Gehl
11:00	<i>COFFEE BREAK</i>	
11:30	Clinical Applications: GET (Gene Therapy)	Richard Heller

12:30 *LUNCH*

**Afternoon**

14:00	Students Posters and Discussion	
15:00	<i>COFFEE BREAK</i>	
15:30	Clinical Applications: Veterinary Oncology	Maja Cemazar
16:00	Clinical Applications: IRE	Fernando Burdio Aleksandar Radosevic
16:45	Electrochemotherapy: The Insp-ECT (International Network for Sharing practices on ECT) Experience	Giulia Bertino
17:25	Medical Experts Panel: Gaps and Challenges in Current Clinical Practice	ALL Speakers Moderator: J. Impellizeri

20:00 **Course Dinner and Best Poster Award**

## DAY 5 – Tuesday, May 6<sup>th</sup>

Theme: FUTURE DIRECTIONS

### Morning

09:00	Clinical Applications in Treatment of Vascular Malformations	Gregor Sersa
09:30	Tumor Treatment: Clinical Experiences of Bone Metastasis at Vertebrae	Lluís M. Mir
10:00	Energy-Based Tumor Ablation and its Interplay with the Adaptive Immune Response	Qi Shao
10:45	<i>COFFEE BREAK</i>	
11:15	Combined Treatment of ECT and Immunotherapy through IL12 Electroporation Transfer in Veterinary	Maja Cemazar
11:45	Development of Novel Genetic Vaccine Platforms: from the Idea to GMP Production	Luigi Aurisicchio

12:30 *LUNCH*

*Free Afternoon with EXCURSION*

## DAY 6 – Wednesday, May 7<sup>th</sup>

Theme: CLOSING REMARKS and SUM-UP

### Morning

09:00	State of the Art at 5 <sup>th</sup> World Congress Electroporation in Rome 2024	Francesca Apollonio
09:30	Overview of Recently Funded Research Programs	All Speakers
10:30	Survey	
11:00	Closing Remarks and Overview of EP Topics at Erice	F. Bersani, M.R. Scarfi

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