# International School of Bioelectromagnetism "Alessandro Chiabrera"

# IX Course - Possible biomedical applications of EMFs to cancer: from Biology and *in silico* to clinical perspectives

(Erice, March 24 - 30, 2019)

## **PROGRAMME**

March 24 – Sunday

Arrival and accommodation

March 25 – Monday

10.00 - 10.30 - Introduction to the Course by the Directors

#### PHYSICAL PRINCIPLES OF EMF

10.30 – 11.30 - EMF spectrum and general properties– *Ferdinando Bersani (Bologna, Italy)* 

11.30 – 12.30 - ELF generation and dosimetry - Stefania Romeo (Naples, Italy)

12.30 - 14.30 - Lunch

14.30 – 15.30 - RF generation and dosimetry - Rita Massa (Naples, Italy)

15.30 – 17.00 - Thermal and non-thermal effects of ELF and RF – *Stefania Romeo* (Naples, Italy)

Coffee break - 17.00 -17.30

#### **BIOLOGICAL EFFECTS OF EMF IN RELATION TO CANCER**

17.30 – 18.30 - Introduction to biology of cancer - *Maja Cemazar (Ljubljana, Slovenia)* 

# **Biological effects in vitro**

18.30 – 19.30 - Static and ELF fields – Mats Olof Mattsson (Östersund, Sweden)

## March 26 – Tuesday

# Biological effects in vitro (cont.)

8.30 - 9.30 - High frequency EMF – Maria Rosaria Scarfi (Naples, Italy)

## Biological effects in vivo

9.30 -10.30 - Static and ELF fields — *Isabelle Lagroye (Bordeaux, France)* Coffee break 10.30 -11.00

11.00 -12.00 - High frequency EMF – Isabelle Lagroye (Bordeaux, France)

12.00 -13.00 - What is learnt from epidemiology- *Anke Huss (Utrecht, the Netherlands)* 

Lunch 13.00 - 15.00

15.00 – 16.00 - Seminar: Dielectric properties of healthy and cancerous tissues – *Lourdes Farrugia (Malta)* 

## Methodological problems in Bioelectromagnetics

16.00 – 17.00 - General criteria for a good experimental practice in Bioelectromagnetics – biology– *Maria Rosaria Scarfi (Naples, Italy)* Coffee break 17.00 - 17.30

17.30 – 18.30 - General criteria for a good experimental practice in Bioelectromagnetics –electromagnetic - *Rita Massa (Naples, Italy)* 

# March 27 - Wednesday

#### **EMFs IN DIAGNOSIS**

8.30 - 10.30 - Microwave imaging and its application in cancer diagnosis - *Emily Porter* 

Coffee break 10.30 -11.00

11.00 – 12.00 - Imaging with Terahertz and MMW – speaker to be confirmed

12.00 – 13.00 - seminar: COST Action "MyWave" *Lourdess Farrugia (Malta)* 

Lunch 13.00 - 15.00

#### THERAPEUTIC APPLICATIONS: RESULTS AND PERSPECTIVES

## Thermal effects: therapeutic perspectives

15.00 – 16.00 - Hyperthermia - Gerard van Rhoon (Rotterdam, The Netherlands)

16.00 – 17.00 - Thermal ablation – Luigi Solbiati (Milan, Italy)

17.00 – 18.30 - Coffee break and Poster section

## March 28 – Thursday

THERAPEUTIC APPLICATIONS: RESULTS AND PERSPECTIVES (Cont.)

## **Electroporation and electrochemotherapy**

8.30 – 9.30 - Preclinical and clinical aspects of electrochemotherapy – *Gregor Sersa* (*Ljubljana*, *Slovenia*)

9.30-10.30 - Immunological principles of combined treatment with electrochemotherapy - *Emanuela Signori (Rome, Italy)* 

Coffee break 10.30 – 11.00

11.00 – 12.00 - New clinical developments in electrochemotherapy – *July Gehl* (Copenhagen, Denmark)

12.00 - 14.00 - Lunch

#### IN SILICO MODELING

## Modeling and treatment planning for therapies of cancer

14.00 – 15.00 - Hyperthermia – *Theodoros Samaras (Thessaloniki, Greece)* 

15.00 – 16.00 - Ablative techniques - Theodoros Samaras (Thessaloniki, Greece)

16.00 – 17.00 - Modelling and treatment planning for Electrochemotherapy - *Bor Kos (Ljubljana, Slovenia)* 

Coffee break 17.00 - 17.30

## **Emergent biological effects of EMFs in relation to therapy**

17.30 – 18.30 - Low frequencies - Mats Olof Mattson (Östersund, Sweden)

18.30 – 19.30 - High frequencies - Maria Rosaria Scarfi (Naples, Italy)

March 29 – Friday

## **Touristic tour**

### March 30 - Saturday

#### RECENT PERSPECTIVES OF PMF IN RELATION TO CANCER THERAPY

8.30 – 9.30 - PEMF and cancer cells: in vitro effects – *Ruggero Cadossi (Modena, Italy)* 

9.30 – 10.30 - The long road to validate PEMF use in cancer patients – *Ruggero Cadossi (Modena, Italy)* 

Coffee break 10.30 - 11.00

11.00 – 12.00 - Devices on the market: a critical overview (seminar)- *Ferdinando Bersani (Bologna, Italy)* 

# Round table on Future perspectives in diagnosis and therapy

**Conclusions-END** (Saturday, about 13.30 am)