

INTERNATIONAL SCHOOL OF BIOELECTROMAGNETICS
“Alessandro Chiabrera” 1st COURSE:
“Methodology in Bioelectromagnetic Experimental Investigations”

Erice, Italy: April 21-28, 2004

The first Course of the International School of Bioelectromagnetics “Alessandro Chiabrera” was devoted to the methodologies needed in designing and performing experimental studies in Bioelectromagnetics. The School was hosted by the Ettore Majorana Foundation and Centre for Scientific Culture located in Erice, Sicily and the Course was organized together with the World Health Organization, the European Bioelectromagnetics Association (EBEA) and the Inter-University Centre for the study of the Interaction between Electromagnetic Fields and Biosystems. In view of the ongoing health risk assessment of electromagnetic field exposure, the quality of experimental investigations is of utmost importance. Consequently, experimental investigation of biological effects of electromagnetic fields implies the use of modern and suitable methodologies for all stages of the study.

The main topics of the Course were dosimetry and exposure systems, methods and problems of specific *in vivo* and *in vitro* studies, experimental planning and data analysis. All areas of interest were covered in lectures, seminars and discussions where senior scientists shared with participants their

own experience. A couple of hours were devoted to poster presentations by participants. In the last day, a final round table was organized by the leaders of the new European program. All lectures addressed to a wide range of scientists having various background: physicists, biologists, physicians, statisticians and engineers. Special background to understand seminars were scheduled to help scientists having a specific concepts and methodologies used in other domains.

The following invited lectures were presented:

- Introduction to physics of RF
- RF exposure systems *in vitro*
- RF exposure systems *in vivo*
- RF experimental dosimetry
- Introduction to physics of ELF
- ELF exposure systems *in vitro* and *in vivo*
- ELF experimental dosimetry
- Experimental planning and statistical analysis
- Analysis of cellular functions
- Cellular signalling
- Genomics and proteomics
- Genotoxic effects *in vitro*
- Genotoxic effects *in vivo*
- Carcinogenesis *in vivo*

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- Cancer related, non genotoxic effects *in vitro*
- Electrophysiological measurements *in vitro*
- Behaviour and nervous system
- Gene expression.

A poster was presented by the Institute of Public Health, Iasi, Romania: "Frequency-Dependent Ceiling Limits for Occupational Exposure to Static and Extremely Low Frequency Magnetic Field", authors Cristian Goiceanu and Razvan Danulescu. Our participation

was possible by kindly financial support of organizers.

The first Course of the International School of Bioelectromagnetics joined a number of approximately 60 participants, coming from many European countries, but also from other continents: Austria, Denmark, France, Finland, Germany, Greece, Italy, Japan, Mexico, Poland, Romania, Sweden, Switzerland, USA. WHO was represented by dr. Emilie Van Deventer.

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