«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE
TO PAY A PERMANENT TRIBUTE TO ARCHIMEDES AND GALILEO GALILEI, FOUNDERS OF MODERN SCIENCE AND TO ENRICO FERMI, THE "ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES

INTERNATIONAL SCHOOL OF STATISTICAL PHYSICS

17th Course: *FRONTIERS IN WATER BIOPHYSICS*

ERICE-SICILY: 21 – 26 JULY 2019

Sponsored by the: Italian Ministry of Education, University and Scientific Research · Sicilian Regional Government

PROGRAMME AND LECTURERS

Physics of proteins, biological cells, and water
• H.C. ALLEN, Ohio State University, Columbus, OH, US

Structural and dynamical properties of bio-membranes
• M.M.A.E. CLAESSENS, University of Twente, Enschede, NL

Hydration of membranes
• C. LORENZ, King's College London, London, UK

Physical properties of biological macromolecules, and their assemblies, e.g. hydrogels
• B.T. STOKKE, Norwegian University of Science and Technology, Trondheim, NO

Characterization of the structural equilibria occurring in DNA sequences
• C. SISSI, University of Padova, IT

G-quadruplex folding in the molecular recognition
• D. MONTESARCHIO, University of Napoli Federico II, Napoli, IT

Lipids, DNA and Proteins by SANS and SAXS
• F. SPINOZZI, Marche Polytechnic University, Ancona, IT

Gels and glasses studied by PCS and XPCS
• B. RUZICKA, CNR- ISC, Roma, IT

Water between membranes: Structure and Dynamics
• F. MARTELLI, IBM, Bristol, UK

Sequences of non-canonical DNA
• M. WEBBA DA SILVA, Ulster University, Coleraine, UK

Structural protein dynamics by time resolved X-ray scattering
• G. SCHIRÒ, IBS-CNRS, Grenoble, FR

Nanoscale bioelectrical characterization
• G. GOMILA, IBEC, University of Barcelona, Barcelona, ES

Proteins and sugars structure
• C.M. OTHON, Ripon College, Ripon, WI, US

Water and Water solutions under extreme conditions
• P. GALLO, University Roma Tre, Roma, IT

PURPOSE OF THE COURSE

The scientific program of the Course will offer an overview of the latest scientific advances in understanding the structure and dynamics of biosystems that make water such a unique molecule in all aspects of human life, including nanotechnology for civil and military purposes and geostrategic policies. We will have the participation of prominent researchers in the areas of physics, chemistry and biology working on confined systems in topics like: Diffusion and entropic transport in confined systems; Ion and polymer translocation; Phase transitions and chemical reactions in confined media; Confined active matter; Macromolecular crowding; Energy conversion in confinement, Membranes, Gels and DNA properties. With the organization of this Conference, we will provide a unique opportunity to exchange points of view, to promote contacts and new collaborations among researchers working on different inter-disciplinary areas, and to create a forum for debate that can help to provide answers about the novel effects induced by confinement.

APPLICATIONS

Person wishing to attend the Course should send a letter to:
Professor Lucia COMEZ
Dipartimento di Fisica, Università di Perugia, Perugia, Italy
Tel +39 075 5852785 +39 3385717854
E-mail: lucycomez@gmail.com; comez@iom.cnr.it

PLEASE NOTE

Participants must arrive in Erice on July 21, no later than 2 p.m.

POETIC TOUCH

According to legend, Erice, son of Venus and Neptune, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The founder of modern history — i.e. the recording of events in a methodic and chronological sequence as they really happened without reference to mythical causes — the great Thucydides (~500 B.C.), writing about events connected with the conquest of Troy (1183 B.C.) said: *«After the fall of Troy some Trojans on their escape from the Achaei arrived in Sicily by boat and as they settled near the border with the Sicanians all together they were named Elymi: their towns were Segesta and Erice.»* This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchise, by his son Enea, on the coast below Erice. Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others have celebrated this magnificent spot in Sicily in their poems. During seven centuries (XIII-XIX) the town of Erice was under the leadership of a local oligarchy, whose wisdom assured a long period of cultural development and economic prosperity which in turn gave rise to the many churches, monasteries and private palaces which you see today. In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture. Other masterpieces of ancient civilization are to be found in the neighbourhood: at Motya (Phoenician), Segesta (Elymian), and Selinunte (Greek). On the Aegadian Islands — theatre of the decisive naval battle of the first Punic War (264-241 B.C.) — suggestive neolithic and paleolithic vestiges are still visible: the grottoes of Favignana, the carvings and murals of Levanzo.

Splendid beaches are to be found at San Vito Lo Capo, Scopello, and Cornino, and a wild and rocky coast around Monte Cofano: all at less than one hour's drive from Erice.

More information about the other activities of the "ETTORE MAJORANA" FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE can be found on the WWW at the following address:
http://www.ccsem.infn.it

A. CESÀRO — L. COMEZ – G. FRANZESE
DIRECTORS OF THE COURSE

P. HÄNGGI – F. MARCHESONI
DIRECTORS OF THE SCHOOL

A. ZICHICHI
PRESIDENT EMFCSC