INTERNATIONAL SCHOOL OF BIOPHYSICS «ANTONIO BORSSELLINO»

43rd Course: NANOSCALE BIOPHYSICS: FOCUS ON METHODS AND TECHNIQUES

ERICE–SICILY: 17 – 24 APRIL 2016

Sponsored by: • Italian Ministry of University and Research • Sicilian Regional Government

PROGRAMME AND LECTURERS

Structure Illumination Microscopy
• S. ABRAHIMSSON, The Rockefeller University, New York, NY, US
Non linear and multвидual optical microscopy
• P. BIANCHINI, Istituto Italiano di Tecnologia, Genova, IT

Nanoscopio fluorescente bisternstra!
• R. BIZZARRI, NEST, Istituto Nanoscienze-CNR and Scuola Normale Superiore, Pisa, IT

FRET/FILM for the nanoscale investigation of protein interactions and molecular environment
• G. BUNT, Georg-August-Universität, Göttingen, DE

Current Developments in Single Molecule Biophysics
• C. BUSTAMANTE, University of California, Berkeley, CA, US

Protein-membrane interaction. From model membranes to living cells: new AFM approaches
• C. CANALE, Istituto Italiano di Tecnologia, Genova, IT

Nanobiosensors
• L. CASALIS, Elettra-Sincrotrone, Trieste, IT

Quantitative approaches in advanced single molecule localization techniques
• F. CELLA ZANACCHI, ICF, The Institute of Photonic Sciences, Barcelona, ES

Optical manipulation for single cell experiments
• D. COJOC, Institute of Materials (IOM-CNR), Area Science Park, Trieste, IT

3D nanostructured surfaces for neuronal network interfaces
• F. DE ANGELIS, Istituto Italiano di Tecnologia, Genova, IT

Nanobiophysics
• A. DIASPRO, Istituto Italiano di Tecnologia, Genova, IT

Non-fluorescence based super-resolution microscopy: from liquid lenses to microphores!
• M. DUOCASTELLA, Istituto Italiano di Tecnologia, Genova, IT

Image Scanning microscopy, SOFI, cryo-STORM and Metal-Induce Energy Transfer Imaging
• J. ENDERLEIN, Georg-August-Universität, Göttingen, DE

Molecular flows in cells
• E. GRATTON, University of California, Irvine, CA, US

Optical Nanoscopy
• S.W. HELL, Max-Planck-Institut for Biophysics Chemistry, Göttingen, DE

Principles and Biological Applications of Localization Microscopy
• S. HESS, University of Maine, Orono, ME, US

Stimulated Emission Based Fluorescence Detection
• F-J. KAO, National Yang-Ming University, Taipei, TW

Biological applications of super-resolution microscopy
• M. LAKADAMYALI, ICF, The Institute of Photonic Sciences, Barcelona, ES

Temporal and spatial spectroscopy for nanoscale investigation of subcellular structures
• L. LANZANO, Istituto Italiano di Tecnologia, Genova, IT

Fast Super-Resolution Microscopy
• P. SAGGIAU, Allen Institute for Brain Science, Seattle, WA, US

Genomic and proteomic characterization of single tumor cells isolated from the peripheral blood
• G. SCOLEI, ERC University of Udine, IT

Focusing of light
• C.J. SHEPPARD, Istituto Italiano di Tecnologia, Genova, IT

Putting the envelope in biological imaging
• H. SHROFF, High Resolution Optical Imaging, NIBIB, NIH, Bethesda, MD, US

Nanoplasmonics
• M. STOCKMAN, Center for Nano-Optics, Georgia State University, Atlanta, GA, US

AFM - Mechanical properties of biomaterials and molecular life time interactions
• J. TOCA HERRERA, University Natural Resources and Life Sci., Vienna, AT

RESOLFT Nanoscopy: applications for life science
• I. TESTA, SciLifeLab, KTH Royal Institute of Technology, Stockholm, SE

How to boost your microscope by exploring new dimensions (temporal, spatial, spectral)
• G. VICIDOMINI, Istituto Italiano di Tecnologia, Genova, IT

Principles and basics of FRET/FILM
• F. WOUTERS, Georg-August-Universität, Göttingen, DE

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 Achei in Sicily by boat and as they settled near the border with the Sicaniains all together they were named Elymii: their towns were Segesta and Erice.» This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchises, by his son Aeneas, on the coast below Erice. Homer (~1000 B.C.), Thucydides (~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 (XII–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 Segeste (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 least one hour’s drive from Erice.

More information about the «Ettore Majorana» Foundation and Centre for Scientific Culture can be found on the WWW at the following address: www.cesm.infn.it