



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



INTERNATIONAL SCHOOL OF CRYSTALLOGRAPHY

49th Course:

INTEGRATIVE STRUCTURAL BIOLOGY

ERICE-SICILY: 2 – 11 JUNE 2017

Sponsored by the: • European Crystallographic Association • International Union of Crystallography
• Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government

PROGRAMME AND LECTURERS

- *Protein synthesis by large cellular assemblies*
- N. BAN, ETH, Zuerich, CH

The anaphase-promoting complex

- D. BARFORD, LMB, Cambridge, UK

Immune recognition of viral pathogens

- P. J. BJORKMAN, Caltec, Pasadena, US

Electron cryo-microscopy of biological nanomachines

- W. CHIU, Baylor College of Medicine, Houston, TX, US

RNA metabolism

- E. CONTI, MPI for Biochemistry, Martinsried, DE

The complement system

- P. GROS, Utrecht University, NL

Cell surface signalling assemblies

- E.Y. JONES, University of Oxford, UK

Membrane proteins: Structure and mechanisms

- W. KÜHLBRANDT, MPI for Biophysics, Frankfurt, DE

Cellular signal transduction

- J. KURIYAN, University of California at Berkeley, US

Antimicrobial drug design

- J.L. MARTIN, Griffith University, Brisbane, AU

Membrane transporters in the brain

- P. NISSEN, Aarhus University, DK

The nuclear pore complex

- M.P. ROUT, The Rockefeller University, New York, US

Protein targeting and membrane protein biogenesis

- I. SINNING, Heidelberg University, DE

Molecular mechanisms in carcinogenesis

- T. SIXMA, NKI, Amsterdam, NL

Virus structure and vaccine design

- D.I. STUART, University of Oxford, UK

High resolution electron microscopy

- S. SUBRAMANIAM, NCI, Bethesda, US

Single molecule biophysics

- A. van OIJNEN, University of Wollongong, AU

Signal transduction by immune receptors

- H. WU, Harvard University, Boston, US

Glucose transporters

- N. YAN, Tsinghua University, Beijing CN

DNA repair, replication and recombination

- W. YANG, NIDDK, Bethesda, US

DNA processing and damage response

- X. ZHANG, Imperial College London, UK

Celebrating the 50th International School of Crystallography

- T.L. BLUNDELL, Cambridge University, UK

PURPOSE OF THE COURSE

Over the last 50 years, crystallography has developed from a method capable of determining the structures of

isolated, soluble proteins to one able to provide detailed information on mechanisms of action of integral membrane proteins, whole viruses and the complex nano-machines that are central to cellular function. To discover how biology works researchers are now combining the power of crystallography with multiple other methods, spanning from the atomic to cellular scale, and including revolutionary developments in electron cryo-microscopy and tomography. This Course will celebrate its milestone as the 50th in the crystallography series started by Dorothy Hodgkin by focusing on integration: 1) of different techniques, 2) of molecular and cellular approaches and 3) of the crystallographic community, including diversity.

The aim is to provide young researchers with a review of the fundamental approaches and latest developments in the application of crystallography and hybrid methods to the structure and function of biological macromolecules and complexes. Lectures will exemplify use of integrated approaches to analyse molecular mechanism in human and pathogen biology. There will be hands-on workshops to provide practical experience and in-depth discussion of topics ranging from sample preparation to data analysis software. To commemorate the achievements of the Erice crystallography school over the past 50 years, the course will feature several sessions that reflect on the past and look to the future to highlight the factors that create an inclusive discipline.

HOW TO APPLY

Interested candidates should register by 30th November 2016 using the form available at the URL <http://erice2017.azuleon.org> or by writing to the Executive Secretary of the International School of Crystallography:

- Dr. Annalisa Guerri
Department of Chemistry
University of Florence
Via della Lastruccia, 3
50019 Sesto Fiorentino, Italy
Tel: +39.055.4573429
email: annalisa.guerri@unifi.it

Please include the following information in your application:

- Your full name(s), age, gender, citizenship;
- Your postal address, phone, fax, electronic mail;
- Your present academic position and scientific interests;
- The title or abstract of a scientific contribution to the poster session(s) which might be included in the programme.

PLEASE NOTE

Participants must arrive in Erice no later than 8 p.m. on 27th May 2016.

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 Achaean arrived in Sicily by boat and as they settled near the border with the Sicilians 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 Anchises, by his son Aeneas, 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 International School of Crystallography can be found on the WWW at the following address:
<http://www.crystalalice.org>

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

Applicants may be able to apply for partial financial support. Please visit www.crystalalice.org to view the full eligibility criteria.

Young researchers should include in their application a list of no more than five scientific publications that they have authored, and a letter of recommendation from their supervisor or from a senior scientist, that justifies any support that the researcher requests.

In order to reflect the multi-disciplinary nature of the Course, priority will be given to applicants who have an appropriate scientific discipline, a good publication rate and a strong correspondence between their current research interest and the topics covered by the school.