The Abdus Salam International Centre for Theoretical Physics

From Genes to Atomic Structures: an Introduction to Synchrotron-Based Structural Biology

Cosponsor(s): IUBMB (International Union of Biochemistry and Molecular Biology), IUCr (International Union of Cristallography), Douglas Instruments Ltd.
Organizer(s): Silvia Onesti and Giorgio Paolucci. Local Organiser: Joseph Niemela
Trieste - Italy, 23 - 27 April 2012

Final programme

Monday, 23 April 2012

23 April 2012

08:30 - 09:20 (Room: Adriatico Guest House (Lower Level 1))
--- Registration ---
All Speakers and Participants are required to complete registration formalities

09:20 - 09:30 **Joseph Niemela** / *ICTP, Trieste, Italy*
Welcome address

09:30 - 10:30 **Bernhard Rupp** / *k.k.Hofkristallamt, San Marcos, USA*
An Introduction to Crystallography

10:30 - 11:20 **Silvia Onesti** / *Sincrotrone Trieste, Italy*
An Introduction to Crystallization

11:20 - 11:40 --- Coffee Break ---

11:40 - 12:10 **Patrick Shaw Stewart** / *Douglas Instruments Ltd., U.K.*
Random Microseeding

12:10 - 13:00 **Tamar Unger** / *Weizmann Institute of Science, Rehovot, Israel*
Cloning, Protein Expression and Purification - part 1

13:00 - 13:50 --- Lunch Break ---

13:50 - 14:30 --- Afternoon lectures at Elettra. ---
A private bus will take participants to Elettra for the afternoon session. All participants are requested to meet near bus no.36 bus stop at 1.50pm sharp.

14:30 - 16:30 **Tamar Unger** / *Weizmann Institute of Science, Rehovot, Israel*
Cloning, Protein Expression and Purification - part 2
at Elettra

16:30 - 18:30 **Barbara Medagli / Patrick Shaw Stewart** / *Sincrotrone Trieste, Italy / Douglas Instruments Ltd., U.K*
Crystallization Practicals
at Elettra

19:30 - 21:30 (Room: Adriatico Guest House Cafeteria)
--- Welcome Reception ---

Tuesday, 24 April 2012 (Room:Adriatico Guest House Giambiagi Lecture Hall)

24 April 2012

09:00 - 10:00 **Mohammad Yousef** / *Southern Illinois University, USA*
An Introduction to Synchrotron Radiation

10:00 - 10:45 **Andrew Leslie** / *University of Cambridge, U.K.*
Introduction to Data Collection. Practical Issues plus an Introduction to the Ewald Sphere and the Reciprocal Lattice

10:45 - 11:05 --- Coffee Break ---

11:05 - 11:50 **Andrew Leslie** / *University of Cambridge, U.K.*
Data Processing with Mosflm

11:50 - 12:45 **Andrew Leslie** / *University of Cambridge, U.K.*
Scaling and Merging Data

12:45 - 14:30 --- Lunch Break ---

14:30 - 17:30 (Room: Adriatico Guest House - Eklund Informatics Lab (Lower Level 1))
A. Leslie / M. Yousef / *Southern Illinois University, USA / University of Cambridge, U.K.*
Data Processing Practicals

Wednesday, 25 April 2012 (Room:Adriatico Guest House Giambiagi Lecture Hall)

25 April 2012

09:00 - 10:45 **Bernhard Rupp** / *k.k.Hofkristallamt, San Marcos, USA*
Structure Solution (I) Electron Density Recontruction and Molecular Replacement

10:45 - 11:15 --- Coffee Break ---

11:15 - 13:00 **Bernhard Rupp** / *k.k.Hofkristallamt, San Marcos, USA*
Structure Solution (II) Experimental Phasing and Density Modification

13:00 - 14:30 --- Lunch Break ---

14:30 - 16:30 **Anastassis Perrakis** / *Netherlands Cancer Institute, Amsterdam, the Netherlands*
Model Building

Thursday, 26 April 2012 (Room:Adriatico Guest House Giambiagi Lecture Hall)

26 April 2012

09:00 - 11:00 **Roberto Steiner** / *King's College London, U.K.*
Structure Refinement

11:00 - 11:30 --- Coffee Break ---

11:30 - 13:00 **Joel L. Sussman** / *Weizmann Institute of Science, Rehovot, Israel*
Proteopedia

13:00 - 14:30 --- Lunch Break ---

14:30 - 17:30 (Room: Adriatico Guest House - Eklund Informatics Lab (Lower Level 1))
Roberto Steiner/Anastassis Perrakis / *King's College London, U.K. / Netherlands Cancer Institute, Amsterdam, the Netherland*
Computational Crystallography Practicals

Friday, 27 April 2012 (Room:Adriatico Guest House Giambiagi Lecture Hall)

27 April 2012

09:00 - 10:30 **Silvia Onesti** / *Sincrotrone Trieste, Italy*
A Brief Overview of Single Particle Electron Microscopy

10:30 - 11:00 --- Coffee Break ---

11:00 - 12:00 **Heinz Amenitsch** / *Elettra, Trieste, Italy*
SAXS

12:00 - 13:00 **Zehra Sayers** / *Sabanci University, Istanbul, Turkey*
SAXS: Case Studies

13:00 - 13:50 --- Lunch Break ---

13:50 - 14:30 --- Afternoon lectures at Elettra. ---
A private bus will take participants to Elettra for the afternoon session. All participants are requested to meet near bus no.36 bus stop at 1.50pm sharp.

14:30 - 16:00 **Doriano Lamba/ Mohammad Yousef** / *Istituto di Cristallografia, Trieste, Italy / Southern Illinois University, USA*
Data Collection at XRD1
at Elettra

16:00 - 17:30 **Giorgio Paolucci** / *Elettra, Trieste, Italy*
Visit to the Free Electron Laser Laboratory - FERMI
at Elettra