XIX School of Pure and Applied Biophysics

on

Theoretical and Computational Approaches to Biophysics



Venice, - Campo Santo Stefano, January 26th-30th, 2015

Organised by:

<u>SIBPA</u> - Società Italiana di Biofisica Pura e Applicata <u>IVSLA</u> - Istituto Veneto di Scienze Lettere ed Arti

Scientific Coordinators

- Giorgio M. Giacometti (IVSLA and University of Padua)
- Velia Minicozzi (Department of Physics, University of Rome Tor Vergata)
- Mario Nicodemi (Department of Physics, University of Neaples "Federico II")

Director of the School

• **Giorgio M. Giacometti** (*IVSLA and University of Padua*) E-mail: <u>gcometti(at)bio.unipd.it</u>

School overview

The School focuses on contemporary biophysical topics. The selected subjects will draw young researchers' attention to frontier research issues of considerable scientific and educational impact. The School will be held in the magnificent Palazzo Franchetti, the premises of the <u>"Istituto di Scienze Lettere ed Arti"</u> located in the historical centre of Venice.

The focus of the 2015 School is *Theoretical and Computational Approaches to Biophysics* covering Polymer Physics models of chromosome organization in the cell nucleus, and ab-initio and classical Molecular Dynamics simulations of proteins. Different theories, algorithms and experiments will be discussed by the invited speakers.

SPEAKERS

- Gianfranco Bocchinfuso, University of Rome Tor Vergata, Roma (Italy)
- Michele Caselle, University of Turin, Torino (Italy)
- Pietro Faccioli, University of Trento, Trento (Italy)
- Andrea Gamba, Politecnico di Torino, Torino (Italy)
- Paolo Giannozzi, University of Udine, Udine (Italy)
- Achille Giacometti, University of Venice, Venezia (Italy)
- Leonardo Guidoni, University of L'Aquila, L'Aquila (Italy)
- Giovanni La Penna, ICCOM-CNR, Firenze (Italy)
- Enzo Marinari, University of Rome Sapienza, Roma (Italy)
- Cristian Micheletti, SISSA, Trieste (Italy)
- Yifat Miller, Ben-Gurion University of the Negev, Beer Sheva (Israel)
- Silvia Morante, University of Rome Tor Vergata, Roma (Italy)

- Ana Pombo, MDC, Berlin (Germany)
- Angelo Rosa, SISSA, Trieste (Italy)
- Giancarlo Rossi, University of Rome Tor Vergata, Roma (Italy)
- Lorenzo Stella, University of Rome Tor Vergata, Roma (Italy)

REGISTRATION

Maximum 35 students will be admitted to the school.

A poster session will be held for students to present their activity.

The participation fee is **350 Euro** which includes five nights' accommodation and attendance at the lessons. The fee for students who do not need night's accommodation is **165 Euros**.

Deadline for registration 30th November 2014.

Applicants are admitted to the school by the Scientific Committee based on the information provided on the application form (short curriculum). The results of the selection will be individually communicated by e-mail (or phone).

Payment must be performed within two weeks of notification of admission. Applications are encouraged from all young scientists (PhD students and post doctors) interested in the topics of the school.

REGISTRATION INFORMATIONS

Deadline November, 30th 2014

Applications are encouraged from young scientists (PhD students and postdocs) interested in the topics of the school.

A poster session will be held for students to present their activity (the presentation of a poster is not mandatory).

Participation fee:

- 1. 350 euros (includes five nights accommodation and lectures)
- 2. 165 euros (includes only lectures and not accommodation)

A maximum of 35 participants are admitted to the school by the Scientific Committee based on the information provided in the application. The results of the selection will be communicated by email (or phone). If admitted, payment must be transferred within two weeks of the notification of admission.

The deadline for registration is November 30, 2014.

Application process:

- Send an email to the Scientific Committee at: minicozzi@roma2.infn.it and nicodem@na.infn.it
- In the subject field, write your full name and "Scuola di Venezia"
- In the email, please provide:
- 1. contact information (name, affiliation, address, email, and phone number)
- 2. current position
- 3. name of reference person (e.g. supervisor)
- 4. preliminary poster title (not mandatory)
- 5. short CV (maximum one A4 page; text and pdf files are admitted).

Further information is available through the scientific coordinators or the director of the school.

	MONDAY 26	TUESDAY 27	WEDNESDAY 28	THURSDAY 29	FRIDAY 30
9:00 - 9:30	WELCOME				
9:30 - 10:00		Lecture 5	Lecture 9	Lecture 12	Lecture 15
10:00 - 10:30	Lecture 1				
10:30 - 11:00		BREAK	BREAK	BREAK	BREAK
11:00 - 11:30	BREAK				
11:30 - 12:00		Lecture 6	Lecture 10	Lecture 13	Lecture 16
12:00 - 12:30	Lecture 2				
12:30 - 13:00		_			FAREWELL
13:00 - 13:30		LUNCH	LUNCH	LUNCH	
13:30 - 14:00	LUNCH				
14:00 - 14:30		_	Lactura 11		
14:30 - 15:00		Lecture 7		Lecture 14	
15:00 - 15:30	Lecture 3				
15:30 - 16:00		BREAK		BREAK	
16:00 - 16:30	BREAK		FREE		
16:30 - 17:00		Lecture 8	TINEE	DOSTER SESSION	
17:00 - 17:30	Lecture 4			FOSTER SESSION	
17:30 - 18:00					

Lecture 1 - Giancarlo Rossi "Simulating simulations"

Lecture 2 - Paolo Giannozzi "tba"

Lecture 3 - Gianfranco Bocchinfuso "Classical molecular dynamics: principles and applications"

Lecture 4 - Leonardo Guidoni "Quantum Mechanics / Molecular Mechanics Simulations in Biophysics"

Lecture 5 - Yifat Miller "Molecular dynamics simulations as a tool to investigate neurodegenerative diseases"

Lecture 6 - Giovanni La Penna "Integrating models for ions in biological systems"

Lecture 7 – Silvia Morante "tba"

Lecture 8 – Lorenzo Stella "Different molecular dynamics approaches to characterize peptide-membrane interactions and possible comparisons with experimental data"

Lecture 9 - Pietro Faccioli "Path integral-based methods for rare conformational transitions"

Lecture 10 - Andrea Gamba "Models of signaling circuits"

Lecture 11 – Achille Giacometti "Entropy vs Enthalpy in transition of biopolymers: insights from simple models"

Lecture 12 - Michele Caselle "Computational approaches to Gene Regulation"

Lecture 13 - Cristian Micheletti "The knotted strands of life"

Lecture 14 – Ana Pombo "tba"

Lecture 15 - Enzo Marinari "tba"

Lecture 16 – Angelo Rosa "tba"