

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with the International School for Advanced Studies (SISSA), will hold a

Workshop on KNOTS AND LINKS in BIOLOGICAL and SOFT MATTER SYSTEMS 26 - 30 September 2016

Miramare, Trieste, Italy

In recent years the problem of biomolecular knotting has attracted more and more interest across different scientific disciplines. This is largely due to the advancement of single-molecule manipulation techniques, which have provided unprecedented quantitative insight into the ubiquity of various form of topological entanglement, especially knots, in biomolecules.

The wealth of available experimental data has, in turn, accelerated much activity on the theoretical and modelling side aimed at understanding the general mechanisms that govern the dynamic formation of knots and links in biopolymers as well as understanding their biological implications.

The workshop will focus on:

- 1) The active and passive molecular mechanisms adopted by living organisms to deal with the self- and mutual-entanglement that inevitably arises in the "molecules of life" (DNA, RNA and proteins) inside the crowded cellular environment;
- 2) The significant advancements in the design of synthetic molecular constructs capable of attaining novel topologies, particularly knotted ones;
- 3) Soft-matter systems where the knotted or linked structures are not of molecular origin.

GRANTS

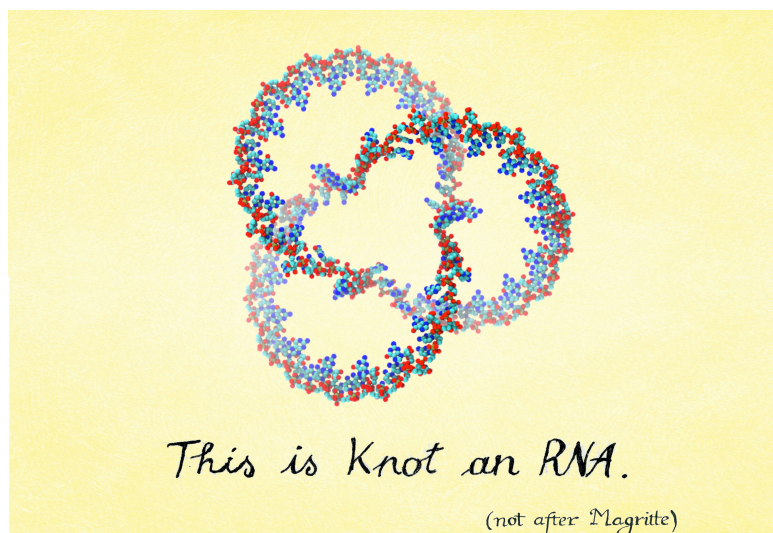
A limited number of grants are available to support the travel and living expenses of selected participants, with priority given to participants working in a developing country and who are at the early stages of their career.

HOW TO APPLY FOR PARTICIPATION

The online **Application form** can be accessed at the activity website:

<http://indico.ictp.it/event/7663/>

Comprehensive instructions will guide you step by step to fill out and submit the application form.



Computer-generated image of an "impossible" RNA knot presented in the image treachery style of R. Magritte.

Credits: Francesca Micheletti, Henri Orland and Cristian Micheletti.



ORGANIZERS

C. Micheletti (SISSA)
E. Orlandini (Università di Padova)
D. W. Sumners (Florida State University)
M. Marsili (ICTP, Local Organizer)

SPEAKERS

Gareth Alexander (Warwick University)
Dorothy Buck (Imperial College London)
Jason Cantarella (University of Georgia)
Marek Cieplak (Polish Academy of Sciences)
Ivan Coluzza (University of Vienna)
Simon Čopar (Jozef Stefan Institute, Ljubljana)
Tetsuo Deguchi (Ochanomizu University)
Yuanan Diao (UNC Charlotte)
Giovanni Dietler (EPFL, Lausanne)
Sophie Jackson (University of Cambridge)
Randall Kamien (University of Pennsylvania)
David Leigh (Manchester University)
Davide Marenduzzo (Edinburgh University)
Mark Miller (Durham University)
Kenneth Millett (UC Santa Barbara)
Henri Orland (CEA Saclay)
Eric Rawdon (U. of St. Thomas, Minnesota)
Renzo Ricca (University of Milan-Bicocca)
Andrzej Stasiak (University of Lausanne)
Joanna Sułkowska (University of Warsaw)
Matthew Turner (Warwick University)
Mariel Vazquez (UC Davis)
Peter Virnau (Mainz University)
David Wales (Cambridge University)
Stuart Whittington (Toronto University)
Lynn Zechiedrich (Baylor College, Houston)
Slobodan Žumer (University of Ljubljana)

DEADLINE

for submitting applications

15 May 2016

ACTIVITY SECRETARIAT

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