Max-Planck-Institut für Physik komplexer Systeme
Dresden, Germany

International Workshop and Seminar

Structural approaches to sequence evolution: Molecules, networks, populations

July 5 - 10, 2004

Scientific coordinators:

Ugo Bastolla, Centro de Astrobiología, Torrejón de Ardoz, Spain

Markus Porto, Technische Universität Dresden, Dresden, Germany

H. Eduardo Roman, Università di Milano, Milano, Italy

Michele Vendruscolo, University of Cambridge, Cambridge, UK

Organisation: **Mandy Lochar**, MPIPKS Dresden, Germany

The study of molecular evolution has two main objectives: (i) the reconstruction of the biochemical history of life through the analysis of the macromolecules of existing organisms; (ii) the understanding of the determinants of the evolution at the molecular level. These goals can only be accomplished by a highly interdisciplinary combination of experimental techniques of molecular biology, bioinformatics, and mathematical modeling. The increasing amount of data made available by genome sequencing projects are demanding an increasing integration of these disciplines. In particular, progresses in understanding the structural properties of biological entities at different levels, such as molecules, networks, and populations, can greatly contribute both to elucidate the mechanisms of evolution and to reconstruct its course.

We aim at bringing together people from different scientific communities working in the following three main areas: theoretical and empirical studies of population dynamics, computational and experimental studies of the stability and properties of biological macromolecules, and statistical analysis of sequences databases. The possible synergies between these experimental, theoretical, computational, and statistical analysis approaches are anticipated to improve our understanding of the processes and pathways of molecular evolution, and should be pursued further. We hope that our workshop can help stimulating this integration, by bringing these different disciplines together and providing a framework for interaction.

Invited Speakers (* to be confirmed):

G. Bernardi (Italy)
P. Bork (Germany)
L. Duret (France)
A. Eyre-Walker (UK)
H. Fraser (USA)
R. Goldstein (UK)
P. Hammerstein (Germany)
P. Higgs (Canada)
I.K. Jordan (USA)
M. Lässig (Germany)
E. Lázaro (Spain)
A. Lesk (UK)
W.-H. Li (USA)
S. Lindquist (USA)*
P. Liò (UK)
J. Lobry (France)
A. Moya (Spain)
M. Nei (USA)
T. Ohta (Japan)
C. Orengo (UK)
L. Peliti (Italy)
P. Schuster (Austria)
E. Shakhnovich (USA)
J. Shapiro (USA)
P.F. Stadler (Germany)
E. Szathmáry (Hungary)
A. Valencia (Spain)
A. Wagner (USA)*

Applications are welcome and should be made by using the application form on the conference web page. However, please note that the number of attendees is very limited. The registration fee is €100, costs for accommodation and meals will be covered by the Max Planck Institute. In exceptional cases, limited funding for travel expenses is available.

Deadline for applications is March 31, 2004.

For further information and application forms please contact:
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