



Cargèse International School 2020

Biological sequence variation: from statistical modeling to structure, function and evolutionary dynamics

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Web site

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In the course of evolution RNA and protein sequences undergo mutations. The statistics of those mutations and of their correlations reflects the structural and functional constraints exerted on the biomolecules. A fundamental challenge is to extract and exploit this information from rapidly growing sequence databases. The goal of the workshop is to gather scientists involved in the study of coevolution in biomolecules (proteins and RNA), from the points of view of sequence analysis, structural prediction, and evolutionary dynamics. Those fields are at the crossroads of molecular, structural, and evolutionary biology, biochemistry, statistical inference, statistical physics, bioinformatics. We believe that our workshop will be a unique opportunity for experts in those different communities, for theoreticians as well as for experimentalists, to meet, to present their fields of research and recent results, and to foster fruitful exchanges.

Main topics will include

- * Bioinformatics
- * Biological Physics
- * Molecular Biology
- * Populations and Evolution
- * Statistical Mechanics
- * Biochemistry
- * Quantitative Methods
- * Machine Learning and Inference

Eminent scientists in the field will animate the workshop. These include:

Erik Aurell (Stockholm Univ, SU), John Barton (Univ of California, Riverside US), Anne-Florence Bitbol (Sorbonne Univ, Paris, FR), Alessandra Carbone (Sorbonne Univ, Paris, FR), Arup Chakraborty (MIT, Cambridge, US), Arne Elofsson (Stockholm Univ, SU), Raphael Guerois (CEA Saclay, FR), David T. Jones (Univ College London, UK), Ben Lehner (CRG Barcelona, ES), Ronald M. Levy (Temple Univ, Philadelphia, US), Rémi Monasson (ENS, Paris, FR), Faruck Morcos (Univ Texas, Dallas, US), Thierry Mora (ENS, Paris, FR), Richard Neher (Biozentrum Basel, CH), Clement Nizak (ESPCI, Paris, FR), Sergey Ovchinnikov (Harvard, Cambridge, US), Andrea Pagnani (Politecnico Torino, IT), Florencio Pazos (National Centre for Biotechnology, Madrid, ES), Rama Ranganathan (Chicago Univ, US), Paolo de los Rios (EPFL, Lausanne, CH), Elena Rivas (Harvard, Cambridge, US), Olivier Rivoire (College de France, Paris, FR), Yannick Rondelez (ESPCI Paris, FR), Alex Schug (Karlsruhe Instit of Technology, DE), Eugene Shakhnovich (Harvard, Cambridge, US), Hendrik Szurmant (Western Univ of Health Sciences, Los Angeles, US), Oliver Tenaille (INSERM, Paris, FR), Nobuhiko Tokuriki (Univ British Columbia, Vancouver, CA), Tsvi Tlusty (Institute for basic Science, Uslan, KO)

Organization Committee

Simona Cocco (LPS, ENS Paris FR), Martin Weigt (LCQB Sorbonne Univ. Paris FR)

Application and registration

<https://coevolution.sciencesconf.org/>

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Deadline Application : 2020, 15 February

Registration Fees : none

