

Proteomes and Proteins

A Course Jointly Organized by
The International School of Advanced BioMedicine and BioInformatics
and by
The Lipari International School for Computer Science Researchers
Lipari Island, July 9-22, 2006



The proteome is the specific protein complement of each cell. **Proteomics**, the analysis of proteomes' structure and functional organization including protein post-translation modifications and protein-protein interactions (**Interactomics**), represents one of the frontiers of contemporary **biomolecular** and **biocomputational research**. In conjunction with **Genomics**, it will allow to understand how genotypes become phenotypes (eg, the relationship between the nucleotide sequence of a gene and the tridimensional structure of its encoded protein) as well as the dynamic interactions between organisms and the environment, including pathological modifications of their molecular phenotype. Besides making possible the identification of new targets for disease diagnosis and treatment, **Proteomics** will also allow to predict ligand-receptor binding, a critical step both for a thorough understanding of the specificity of molecular interactions and for the discovery of new drugs. Finally, **Proteomics** will uncover potential toxic side effects during drug screening thus guiding the optimization process. In light of this, in 2006 the International School of Advanced BioMedicine and BioInformatics and the Lipari International School for Computer Science Researchers are jointly organizing a course on **Proteomes and Proteins**, aimed at describing the *state of the art* knowledge on proteomes, their dynamic changes during the life cycle of cells and organisms, their modifications in disease states as well as the applications of this knowledge to **Molecular Medicine, Biotechnology** and **Medicinal Chemistry**.

The course will be held in Lipari from July 9 to July 22, 2006. Lipari is one of the Eolie, a group of islands off the coast of Eastern Sicily, and is easily reachable via hydrofoil boat or ferry from Naples, Messina and Milazzo. Its natural settings are simply breathtaking, which explains why Lipari is a very popular vacation spot from early Spring to Autumn. Furthermore, all the major nautical activities one can enjoy are offered. Weather in mid-July is rather warm and pleasant and it is definitely possible to swim and sunbath. The island is very rich in archeological sites from various Ancient Civilizations. Moreover, the Greeks made sure that grapes for excellent wines would be grown there.

Speakers will give seminars and organize the work of Students with the support of Tutors. Two kinds of Participants are welcome: *Students* (Participants who are expected to perform afternoon coursework and take a final examination) and *Auditors* (Participants who are not interested in taking the final examination). Up to **125 Students** and **25 Auditors** will be admitted. Registration fee is 600 Euros inclusive of: 2 weeks school, transfers Catania-Lipari-Catania by the school bus + hydrofoil, 2 social tours and the social dinner. Participants who wish to stay one week only may choose the first week (arrival Sunday July 10 departure Sunday July 17) or the second week (arrival Saturday July 16 departure Saturday July 23). Registration fee for one week is 350 Euros inclusive of: 1 week school, transfer Catania-Lipari (Sunday July 10) or Lipari-Catania (Saturday July 23) by the school bus + hydrofoil, 1 social tour and the social dinner. The social dinner is organized on the black beach of Vulcano island with an optional climbing of the volcano.

Application deadline is **February 15, 2006**. Applicants must include a short *curriculum vitae* with a selected list of publications and specify two professors whom letters of recommendation will be asked to, if necessary. If Students wish to present their original work, they must send a one-page abstract (A4 format, Times New Roman 12). All contributions will be presented as 70cm (height) x 50cm (width) posters. A pdf version of each poster will be published on the school web site (<http://lipari.cs.unict.it/lipari2006/index.htm>). Admission to the School will be notified by **March 15, 2006**.

Speakers

Peter Greenberg, Washington University, Seattle, USA

Sorin Istrail, Brown University, USA

Leslie Kuhn, Michigan State University, East Lansing, USA

Michael Levitt, Stanford University, USA

Lance Liotta, George Mason University USA

Bud Mishra, New York University, New York, USA

Gene Myers, Howard Hughes Medical Institute -Janelia Farms, USA

Valerio Pascucci, Lawrence Livermore, USA

Serge Przedborski, Columbia University, USA

Kimberly A. Watson, University of Reading, Reading, UK

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Directors of the Course

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Scientific Committee

R. Bernardini, N. Crimi, R. De Maria, V. De Pinto, C. Di Pietro, A. Ferro, E. Garaci, D. Garozzo, R. Giugno, S. Guccione, C. Guerra, A. Messina, A. Modesti, A. Pulvirenti, M. Purrello, E. Rizzarelli, S. Stefani, M. Zappia

Tutors

D. Barbagallo, P. Buffa, M.S. Calafato, G. Cantarella, L. Duro, L. Giurato, M. R. Guglielmino, A. Laganà, M. Ragusa, M. Santagati