



E-coli gene regulatory network

SEARCH AND KNOWLEDGE BUILDING FOR BIOLOGICAL DATASETS

November 26 - 30, 2007

ORGANIZING COMMITTEE: YUVAL KLUGER, CHAIR (NYU), XIAOLE SHIRLEY LIU (HARVARD), ITSIK PE'ER (COLUMBIA), GUSTAVO STOLIVITZKY (IBM), OLGA TROYANSKAYA (PRINCETON)

Scientific Overview

The development of new bio-technologies that probe previously unexplored aspects of biological systems has changed the world of biological research radically within the last 10 years. The nature of the data of this rapidly changing biology has created a fertile ground for quantitative scientists. Issues of appropriate strategies for search, what to search for, and how to turn massive quantities of biological data into useful knowledge have moved to the forefront. Contributions from diverse areas such as combinatorics, graph and network theory, differential equations, machine learning, data mining, statistics and statistical physics have been used to create more powerful information search and knowledge management. This interesting blend of fields has created a tower of Babel out of which a communication currency has yet to emerge. This workshop is intended as a convergence of quantitatively oriented researchers addressing these issues in their quest to answer important biological questions. This workshop will provide an opportunity for researchers with quite different perspectives and interests to listen to each other in an atmosphere that will allow us to cross-fertilize ideas and open our minds to the ways other quantitative researchers are thinking about other biological problems.

Confirmed Speakers

Stephen Altschul (National Center for Biotechnology Information); **Ronen Basri** (Weizmann Institute of Sciences); **Richard Bonneau** (NYU); **John Doyle** (California Institute of Technology); **Petros Drineas** (Rensselaer Polytechnic Institute); **Yoav Freund** (UCSD); **Leon Glass** (McGill University); **Jiawei Han** (University of Illinois at Urbana-Champaign); **Trey Ideker** (UCSD); **Alex Krasnitz** (Cold Spring Harbor Laboratory); **Vipin Kumar** (University of Minnesota, Twin Cities); **Gilad Lerman** (University of Minnesota, Twin Cities); **Christina Leslie** (Columbia University); **Avi Ma'ayan** (Mount Sinai School of Medicine, CUNY); **Alexandre Morozov** (Rockefeller University); **Jeffrey Morris** (University of Texas M. D. Anderson Cancer Center); **William Noble** (University of Washington); **Laxmi Parida** (IBM Research); **Srinivasan Parthasarathy** (Ohio State University); **Andrey Rzhetsky** (Columbia University); **Amit Singer** (Yale University); **John Storey** (University of Washington); **Olga Troyanskaya** (Princeton University); **Alexander Urban** (Yale University); **Chris Wiggins** (Columbia University); **Weixiong Zhang** (Washington University in St. Louis)

Long Program Schedule

This workshop is part of the long program "Mathematics of Knowledge and Search Engines."

- Tutorials, September 11 - 20, 2007
- Workshop 1: Dynamic Searches and Knowledge Building, October 1 - 5, 2007
- Workshop 2: Numerical Tools and Fast Algorithms for Massive Data Mining, Search Engines and Applications, October 22 - 26, 2007
- Workshop 3: Social Data Mining and Knowledge Building, November 5 - 9, 2007
- **Workshop 4: Search and Knowledge Building for Biological Datasets, November 26 - 30, 2007**

Participation

Additional information about this workshop including links to register and to apply for funding, can be found on the webpage listed below. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission, and we welcome their applications.

www.ipam.ucla.edu/programs/sews4



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