

PACIFIC SYMPOSIUM ON BIOCOMPUTING 2013

2013 marks the 18th Pacific Symposium on Biocomputing. In addition to being published by World Scientific and indexed in PubMed, the proceedings from all previous meetings are available online at <http://psb.stanford.edu/psb-online/>. PSB provides sessions focusing on emerging areas in biomedical computation. These sessions are typically conceived at the previous PSB meeting as people discuss the opportunities for new sessions. Once again, we have a very exciting set of areas that build on previous sessions and introduce new topics. The excitement about “Big Data” that has received general attention in all fields is particularly relevant to biomedicine. Many of our sessions are based on the premise that there are now amazing data sets available for analysis and integration. These are offering new models for discovery. The data sets range from molecular level to cellular, organism and even population levels. In many cases, the best uses of them require broad biomedical computation skills in data integration, data mining, machine learning, and modeling. The efforts of a dedicated group of leaders has produced an outstanding set of sessions, with associated introductory tutorials. These organizers provide the scientific core of PSB and their sessions are as follows:

Computational Drug Repositioning

Zhiyong Lu, Pankaj Agarwal, and Atul Butte

Epigenomics

Alexander J. Hartemink, Manolis Kellis, William Stafford Noble, and Zhiping Weng

Identification of Aberrant Pathway and Network Activity from High-Throughput Data

Rachel Karchin, Michael F. Ochs, Joshua M. Stuart, Trey Ideker, and Joel S. Bader

Personalized Medicine: From Genotypes and Molecular Phenotypes Towards Therapy

Oliver Stegle, Steven E. Brenner, Quaid Morris, and Jennifer Listgarten

Phylogenomics and Population Genomics: Models, Algorithms, and Analytical Tools

Luay Nakhleh, Noah Rosenberg, and Tandy Warnow

Post-NGS: Interpretation and Analysis of Next Generation Sequencing Data for Basic and Translational Science

Gurkan Bebek, Mehmet Koyuturk, Thomas LaFramboise, Benjamin J. Raphael, and Mark R. Chance

Text and Data Mining for Biomedical Discovery

Graciela H. Gonzalez, Kevin Bretonnel Cohen, Casey Greene, Udo Hahn, Maricel G. Kann, Robert Leaman, Nigam Shah, Jieping Yie

We are also pleased to present four workshops in which investigators with a common interest come together to exchange results and new ideas in a format that is more informal than the peer-reviewed sessions. For this year, the workshops and their organizers are:

Modeling cell heterogeneity: from single-cell variations to mixed cells populations

Eric Batchelor, Maricel G. Kann, Teresa M. Przytycka, Benjamin J. Raphael, and Damian Wojtowicz

Computational Biology in the Cloud: Methods and New Insights from Computing at Scale

Peter M. Kasson

Computational Challenges of Mass Phenotyping

Lawrence Hunter

The Future of Genome-Based Medicine

Quaid Morris, Steven E. Brenner, Jennifer Listgarten, and Oliver Stegle

We thank our keynote speakers, Dan Roden (Science Keynote) and David Ewing Duncan (Ethical, Legal and Social Implications Keynote).

Tiffany Murray manages the peer review process and assembly of the proceedings, and also plays a key role in many other aspects of the meeting. We also thank the National Institutes of Health and the International Society for Computational Biology (ISCB) for travel grant support. We are particularly grateful to the onsite PSB staff Al Conde, Brant Hansen, Georgia Hansen, BJ McKay-Morrison, Jackson Miller, Kasey Miller, and Paul Murray for their assistance. We also acknowledge the many busy researchers who reviewed the submitted manuscripts on a very tight schedule. The partial list following this preface does not include many who wished to remain anonymous, and of course we apologize to any who may have been left out by mistake.

We look forward to a great meeting once again.

Aloha!

Pacific Symposium on Biocomputing Co-Chairs,
October 5, 2012

Russ B. Altman

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Thanks to the reviewers...

Finally, we wish to thank the scores of reviewers. PSB aims for every paper in this volume be reviewed by three independent referees. Since there is a large volume of submitted papers, paper reviews require a great deal of work from many people. We are grateful to all of you listed below and to anyone whose name we may have accidentally omitted or who wished to remain anonymous.

Uri David Akavia	Carol Huang	Matthew Rasmussen
Elizabeth Allman	Hailiang Huang	Gunnar Rättsch
Julia Antonio	Daniel Hyduke	Magnus Rattray
Lars Arvestad	Phil Jaeger	Susanna Repo
Mukul Bansal	Ethan Jewett	Fabio Rinaldi
Gill Bejerano	Nebojsa Jojic	Tom Rindflesch
Andreas Beyer	Purvesh Khatri	Phoebe Roberts
Olivier Bodenreider	Ju Han Kim	Sebastien Roch
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Pascal Braun	Laura Kubatko	Andrey Rzhetsky
Steven Brenner	Jens Lagergren	Julio Saez-Rodriguez
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David Bryant	Xin Li	Neil Sarkar
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Mark Holder	Evan Paull	Louxin Zhang
Antti Honkela	Aris Persidis	Derrick Zwickl
Fereydoun Hormozdiari	Laila Poisson	
Rui Hu	Gerald Quon	