

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Wednesday, January 3, 2018

Registration

7:30-9:30	Registration	Ballroom Prefunction
12:00-2:00	Registration	Ballroom Prefunction
7:30-8:30	Registration	Kilohana

Workshops

9:00-12:00	Machine Learning and Deep Analytics for Biocomputing: Call for Better Explainability Organizers: Dragutin Petkovic, Lester Kobzik, Christopher Re	Salon 2&3
------------	------------------------------------------------------------------------------------------------------------------------------------------------------	-----------

Break

12:00-1:30	Lunch on own
------------	--------------

Workshop

1:30-4:30	Integrating Community-level Data Resources for Precision Medicine Research Organizers: Dana C. Crawford, William S. Bush	Salon 2&3
1:30-4:30	Methods for Examining Data Quality in Healthcare Integrated Data Repositories Organizers: Vojtech Huser, Michael Kahn, and Jeffrey Brown	Plaza

Break

4:30-7:30	Dinner on own
-----------	---------------

Reception

7:30-8:30	23 rd Anniversary Reception	Kilohana
-----------	----------------------------------------	----------

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Thursday, January 4, 2018

Registration

7:30-9:00	Registration	Ballroom Prefunction
10:30-11:30	Registration	Ballroom Prefunction
12:00-1:00	Registration	Ballroom Prefunction

Breakfast

7:30-8:30	PSB Breakfast	Ballroom Courtyard
-----------	---------------	--------------------

Welcome

8:30-8:40	Welcome	Salon 2&3
-----------	---------	-----------

Session 1: Applications of Genetics, Genomics and Bioinformatics in Drug Discovery

Co-chairs: Richard Bourgon, Rick Dewey, Zhengyan Kan, Dan Li

8:40-8:50 Introduction

8:50-9:10 Invited Talk: Rick Dewey

9:10-9:25 *Large-scale integration of heterogeneous pharmacogenomic data for identifying drug mechanism of action*

Yunan Luo, Sheng Wang, Jinfeng Xiao, Jian Peng

9:25-9:40 *Cell-specific prediction and application of drug-induced gene expression profiles*

Rachel Hodos, Ping Zhang, Hao-Chih Lee, Qiaonan Duan, Zichen Wang, Neil R. Clark, Avi Ma'ayan, Fei Wang, Brian Kidd, Jianying Hu, David Sontag, Joel Dudley

9:40-9:55 *Characterization of drug-induced splicing complexity in prostate cancer cell line using long read technology*

Xintong Chen, Sander Houten, Kimaada Allette, Robert P. Sebra, Gustavo Stolovitzky, Bojan Losic

9:55-10:10 *Chemical Reaction Vector Embeddings: Towards Predicting Drug Metabolism in the Human Gut Microbiome*

Emily K. Mallory, Ambika Acharya, Stefano E. Rensi, Peter J Turnbaugh, Rosalie A. Bright, Russ B. Altman

10:10-10:25 *Extracting a Biologically Relevant Latent Space from Cancer Transcriptomes with Variational Autoencoders*

Gregory P. Way, Casey S. Greene

Break

10:25-10:45

Keynote

10:45-11:45 *Improving Healthcare through Biomedical Data Science*

Carlos Bustamante with introduction by Russ Altman

Lunch

11:45-1:00 PSB Hosted Lunch

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Thursday, January 4, 2018 *continued*

Session 2:	Imaging Genomics	Salon 2&3
	Co-chairs: Heng Huang, Junzhou Huang, Kun Huang, Li Shen, Paul M. Thompson, Lin Yang	
1:00-1:10	Introduction	
1:10-1:30	Invited Talk: Mert Sabuncu	
1:30-1:45	<i>Codon Bias Among Synonymous Rare Variants Is Associated with Alzheimer's Disease Imaging Biomarker</i>	
	Jason E. Miller, Manu K. Shivakumar, Shannon L. Risacher, Andrew J. Saykin, Seunggeun Lee, Kwangsik Nho, Dokyoon Kim	
1:45-2:00	<i>Deep Integrative Analysis for Survival Prediction</i>	
	Chenglong Huang, Albert Zhang, Guanghua Xiao	
2:00-2:15	<i>Discriminative Bag-of-Cells for Imaging-Genomics</i>	
	Benjamin Chidester, Minh N. Do, Jian Ma	
2:15-2:30	<i>Genotype-Phenotype Association Study via New Multi-Task Learning Model</i>	
	Zhouyuan Huo, Dinggang Shen, Heng Huang	

Special Topics

2:30-3:00	Parasite & Symbiont Awards	Salon 2&3
-----------	----------------------------	-----------

Discussion Sessions

3:00-4:00	Imaging Genomics	Salon 2&3
4:00-5:00	Applications of Genetics, Genomics and Bioinformatics in Drug Discovery	Salon 2&3

Meeting

5:00-5:30	ISCB Meeting	Salon 2&3
-----------	--------------	-----------

Break

5:30	Dinner on own	
------	---------------	--

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Friday, January 5, 2018

Registration		Ballroom Prefunction
7:30-8:30	Registration	
Breakfast		Ballroom Courtyard
7:30-8:30	PSB Breakfast	
Announcements		Salon 2&3
8:30-8:40	Morning Announcements	
Session 3	Precision Medicine: from diplotypes to disparities towards improved health and therapies Co-chairs: Bruce Aronow, Steven E. Brenner, Dana C. Crawford, Joshua C. Denny, Alexander A. Morgan	Salon 2&3
8:40-8:45	Introduction	
8:45-9:05	Invited Talk: Vence Bonham	
9:05-9:20	<i>Considerations for automated machine learning in clinical metabolic profiling: altered homocysteine plasma concentration associated with metformin exposure</i> Alena Orlenko, Jason H. Moore, Patryk Orzechowski, Randal S. Olson, Junmei Cairns, Pedro J. Caraballo, Richard M. Weinshilboum, Liewei Wang, <u>Matthew K. Breitenstein</u>	
9:20-9:35	<i>Analyzing metabolomics data for association with genotypes using two-component gaussian mixture distributions</i> <u>Jason Westra</u> , Nicholas Hartman, Bethany Lake, Gregory Shearer, Nathan Tintle	
9:35-9:50	<i>Single subject transcriptome analysis to identify functionally signed gene set or pathway activity</i> <u>Joanne Berghout</u> , Qike Li, Nima Pouladi, Jianrong Li, Yves A Lussier	
9:50-10:05	<i>Emergence of pathway-level composite biomarkers from converging gene set signals of heterogeneous transcriptomic responses</i> Samir Rachid Zaim, Qike Li, A. Grant Schissler, <u>Yves A. Lussier</u>	
10:05-10:20	<i>Coalitional game theory as a promising approach to identify candidate autism genes</i> <u>Anika Gupta</u> , <u>Min Woo Sun</u> , Kelley M. Paskov, Nate T. Stockham, Jae-Yoon Jung, Dennis P. Wall	
10:20-10:35	<i>Using simulation and optimization approach to improve outcome through warfarin precision treatment</i> <u>Chih-Lin Chi</u> , Lu He, Kourosh Ravvaz, John Weissert, Peter J. Tonellato	
10:35-10:50	<i>Addressing vital sign alarm fatigue using personalized alarm thresholds</i> Sarah Poole, Nigam Shah	
Discussion Session		Salon 2&3
11:00-12:00	Precision Medicine: from diplotypes to disparities towards improved health and therapies phenotypes	

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Friday, January 5, 2018 *continued*

Poster Session Lunch		Salon 1 and Ballroom Courtyard
12:00-2:30	Poster Session with Lunch (Posters on ODD numbered boards presented from 12:30-1:30) (Posters on EVEN numbered boards presented from 1:30-2:30)	
<hr/>		
Session 4	Democratizing Health Data for Translational Research	Salon 2&3
	Co-chairs: Philip Payne, Nigam Shah, Jessie Tenenbaum, Lara Mangravite	
2:30-2:40	Introduction	
2:40-3:00	Invited Talk: Joe Corkery	
3:00-3:20	Invited Talk: John Wilbanks	
3:20-3:35	<i>ClinGen Cancer Somatic Working Group – Standardizing and Democratizing Access to Cancer Molecular Diagnostic Data to Drive Translational Research</i> Subha Madhavan, Deborah Ritter, Christine Micheel, Shruti Rao, Angshumoy Roy, Dmitriy Sonkin, Matthew McCoy, Malachi Griffith, Obi L. Griffith, Peter Mcgarvey, Shashikant Kulkarni on Behalf of the ClinGen Somatic Working Group	
3:35-3:50	<i>Best Practices and Lessons Learned from Reuse of 4 Patient-derived Metabolomics Datasets in Alzheimer’s Disease</i> Jessica D. Tenenbaum, Colette Blach	
3:50-4:05	<i>A Heuristic Method for Simulating Open-Data of Arbitrary Complexity that Can Be Used to Compare and Evaluate Machine Learning Methods</i> Jason H. Moore, Maksim Shestov, Peter Schmitt, Randal S. Olson	
<hr/>		
Discussion Session		Salon 2&3
4:10-5:10	Democratizing Health Data for Translational Research	
<hr/>		
Break		
5:10-	Dinner & Evening on own	

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Saturday, January 6, 2018

Breakfast		Ballroom Courtyard
7:30-8:30	PSB Breakfast	
Announcements		Salon 2&3
8:30-8:40	Morning Announcements	
Session 5:	Challenges of Pattern Recognition in Biomedical Data	Salon 2&3
	Co-chairs: Anurag Verma, Anna Basile, Marta Byrska-Bishop, Christian Darabos, Shefali Setia Verma	
8:40-8:50	Introduction	
8:50-9:10	Invited Talk: Larry Smarr	
9:10-9:25	<i>Functional Network Community Detection Can Disaggregate and Filter Multiple Underlying Pathways in Enrichment Analyses</i>	
	<u>Lia X. Harrington</u> , Gregory P. Way, Jennifer A. Doherty, Casey S. Greene	
9:25-9:40	<i>Large-Scale Analysis of Disease Pathways in the Human Interactome</i>	
	Monica Agrawal, <u>Marinka Zitnik</u> , Jure Leskovec	
9:40-9:55	<i>Data-driven Advice for Applying Machine Learning to Bioinformatics Problems</i>	
	Randal S. Olson, <u>William La Cava</u> , Zairah Mustahsan, Akshay Varik, Jason H. Moore	
9:55-10:10	<i>Automated disease cohort selection using word embeddings from Electronic Health Records</i>	
	<u>Benjamin S. Glicksberg</u> , Riccardo Miotto, Kipp W. Johnson, Khader Shameer, Li Li, Rong Chen, Joel T. Dudley	
10:10-10:25	<i>Mapping Patient Trajectories using Longitudinal Extraction and Deep Learning in the MIMIC-III Critical Care Database</i>	
	<u>Brett K. Beaulieu-Jones</u> , Patryk Orzechowski, Jason H. Moore	
10:25-10:40	<i>Causal Inference on Electronic Health Records to Assess Blood Pressure Treatment Targets: An Application of the Parametric G Formula</i>	
	<u>Kipp W. Johnson</u> , Benjamin S. Glicksberg, Rachel Hodos, Khader Shameer, Joel T. Dudley	
10:40-10:55	<i>How Powerful Are Summary-Based Methods for Identifying Expression-Trait Associations Under Different Genetic Architectures?</i>	
	<u>Yogasudha Veturi</u> , Marylyn D. Ritchie	
Keynote:		Salon 2&3
11:00-12:15	<i>Data Disparities: Discrimination & Equity in Big Data</i>	
	Jennifer Wagner with introduction by Marylyn Ritchie	
Break		
12:15-1:30	Lunch on Own	
Workshop		Salon 2&3
1:30-4:30	Diversity and Disparity in Biomedical Informatics	
	Organizers: Philip R.O. Payne, William M. Southerland, S. Joshua Swamidass, Laura Wiley, and ClarLynda Williams-DeVane	

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Saturday, January 6, 2018 *continued*

Discussion Session

Salon 2&3

4:30-5:30 Challenges of Pattern Recognition in Biomedical Data

Dinner

Plantation Estate

5:30-7:30 Hawaii Loa Luau

PSB's dinner will be held at the Fairmont's Hawaii Loa Luau this year.

Luau Schedule:

5:30 pm Check-In & Seating Begins

6:00 pm Luau Dinner Buffet

7:00 pm Performance Begins / Bar Closed

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017

Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

Sunday, January 7, 2018

Breakfast		Ballroom Courtyard
7:30-8:30	Breakfast	
Closing		Salon 2&3
8:30-8:40	Closing Announcements	
Session 6:	Advances in Text Mining and Visualization for Precision Medicine	Salon 2&3
	Co-chairs: Graciela Gonzalez, Casey Greene, Hongfang Liu, Abeed Sarker	
8:40-8:50	Introduction	
8:50-9:10	Invited Talk: Jason Moore	
9:10-9:30	Invited Talk: Sophia Ananiadou	
9:30-9:45	<i>VisAGE: Integrating External Knowledge into Electronic Medical Record Visualization</i> <u>Edward W. Huang</u> , Sheng Wang, ChengXiang Zhai	
9:45-10:00	<i>Annotating gene sets by mining large literature collections with protein networks</i> Sheng Wang, <u>Jianzhu Ma</u> , Michael Ku Yu, Fan Zheng, Edward W Huang, Jiawei Han, Jian Peng, Trey Ideker	
10:00-10:15	<i>Improving Precision in Concept Normalization</i> <u>Mayla Boguslav</u> , K. Bretonnel Cohen, William A. Baumgartner Jr., Lawrence E. Hunter	
Session 7:	Reading Between the Genes: Computational Models to Discover Function and/or Clinical Utility from Noncoding DNA	Salon 2&3
	Co-chairs: Yves Lussier, Maricel Kann, Jason Moore, Kenneth Ramos, Joanne Berghout, Francesca Vitali	
10:20-10:30	Introduction	
10:30-10:50	Invited Talk: Martha Bulyk	
10:50-11:05	<i>Network analysis of pseudogene-gene relationships: from pseudogene evolution to their functional potentials</i> <u>Travis S Johnson</u> , Sihong Li, Johnathan R Kho, Kun Huang, Yan Zhang	
11:05-11:20	<i>Convergent downstream candidate mechanisms of independent intergenic polymorphisms between co-classified diseases implicate epistasis among noncoding elements</i> Jiali Han, Jianrong Li, Ikbel Achour, Lorenzo Pesce, Ian Foster, <u>Haiquan Li</u> , Yves A. Lussier	
11:20-11:35	<i>Leveraging putative enhancer-promoter interactions to investigate two-way epistasis in type 2 diabetes GWAS</i> <u>Elisabetta Manduchi</u> , Alessandra Chesi, Molly A. Hall, Struan F. A. Grant, Jason H. Moore	
Discussion Sessions		
11:40-12:40	Reading Between the Genes: Computational Models to Discover Function and/or Clinical Utility from Noncoding DNA	Salon 2&3
11:40-12:40	Text Mining and Visualization for Precision Medicine	Kilohana
PSB over--see you next year!		

Please wear your PSB name tag and lanyard for admission to all events and hosted meals.

December 13, 2017