

Pacific Symposium on Biocomputing (PSB) 2023 Schedule
January 3-7, 2023 Big Island of Hawaii

Monday, January 2, 2023

Registration

4:00-6:00 Registration Ballroom Prefunction

Tuesday, January 3, 2023

Registration

8:00-9:30 Registration Ballroom Prefunction

12:30-2:00 Registration Ballroom Prefunction

Workshop #1 & #2

9:00-12:00 **Risk prediction: Methods, Challenges, and Opportunities** Plaza Ballroom

Organizers: Rui Duan, Lifang He, Ruowang Li, Jason H. Moore

1:30 - 4:30 **Single Cell Spatial Biology for Precision Cancer Medicine**

Organizers: Aaron Newman, Andrew Gentles

Break

12:00-1:30 Lunch on own

Workshop #3 & #4

9:00- 12:00 **Biomedical research in the Cloud: Options and factors for researchers and organizations considering moving to (or adding) cloud computing resources** Salon 2&3

Organizers: Michelle Holko, Nick Weber, Steven E. Brenner, Chris Lunt

1:30-4:30 **High-Performance Computing Meets High-Performance Medicine**

Organizers: Ali Torkamani, Anurag Verma, Jennifer Huffman, Ravi Madduri

Reception

5:00-6:00 Opening Reception – light appetizers Croquet Lawn

Sponsored by the Cleveland Institute for Computational Biology

Dinner

6:00- Dinner on own

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January 5, 2023

Wednesday, January 4, 2023

Registration		
7:30-9:30	Registration	Ballroom Prefunction
11:30-1:30	Registration	Ballroom Prefunction
Breakfast		Ballroom Courtyard
7:30-8:45	PSB Breakfast	
Welcome		Salon 2&3
8:45-9:00	Welcome – Teri Klein	
Session 1		Salon 2&3
Overcoming Health Disparities in Precision Medicine		
Co-chairs: Kathleen Barnes, Carlos Bustamante, Francisco De La Vega, Chris Gignoux, Eimear Kenny, Rasika Mathias, Bogdan Pasaniuc		
9:00-9:10	Introduction	
9:10-9:30	Invited Talk: Eimear Kenny, Icahn School of Medicine at Mount Sinai	
9:30-9:45	<i>Using Association Rules to Understand the Risk of Adverse Pregnancy Outcomes in a Diverse Population</i> Hoyin Chu, Rashika Ramola, Shantanu Jain, David M. Haas, Srimaam Natarajan, Predrag Radivojac	
9:45-10:00	<i>A transfer learning approach based on random forest with application to breast cancer prediction in underrepresented populations</i> Tian Gu, Yi Han, Rui Duan	
10:00-10:15	<i>FairPRS: adjusting for admixed populations in polygenic risk scores using invariant risk minimization</i> Diego Machado Reyes, Aritra Bose, Ehud Karavani, Laxmi Parida	
10:15-10:30	<i>The Role of Global and Local Ancestry on Clopidogrel Response in African Americans</i> Guang Yang, Cristina Alarcon, Paula Friedman, Li Gong, Teri Klein, Travis O'Brien, Edith A. Nutescu, Matthew Tuck, David Meltzer, Minoli A Perera	
Invited Talk		Salon 2&3
10:30-11:00	Erin Ramos, NIH NHGRI with introduction by Teri Klein	
Keynote		Salon 2&3
11:00-12:10	<i>Decoding the Genome to Uncover Molecular Basis of Human Disease</i> Heidi Rehm with introduction by Teri Klein	
Lunch		Ballroom Courtyard
12:10-1:30	PSB Hosted Lunch	
Discussion Session		Salon 2&3
1:30-2:30	Overcoming Health Disparities in Precision Medicine	
Workshop #5		Salon 2&3
2:30-5:30	Accessing clinical-grade genomic classification data through the ClinGen Data Platform Organizers: Karen P. Dalton, Heidi L. Rehm, Matt W. Wright, Mark E. Mandell, Kilannin Krysiak, Lawrence Babb, Kevin Riehle, Tristan Nelson, Alex H. Wagner	
Dinner		
5:30-	Dinner & Evening on own	

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Thursday, January 5, 2023

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 – Russ Altman	
TERI Talks		Salon 2&3
8:40-9:10	Burns Blaxall, The Christ Hospital Health Network	
9:10-9:40	Sharon Plon, Baylor College of Medicine	
Session 2		Salon 2&3
	Precision Medicine: Using Artificial Intelligence to Improve Diagnostics and Healthcare	
	Co-chairs: Steven E. Brenner, Jonathan Chen, Dana C. Crawford, Roxana Daneshjou, Łukasz Kidziński, David Ouyang, Michelle Whirl-Carrillo	
9:40-9:55	Introduction	
9:55-10:10	<i>Multi-treatment Effect Estimation from Biomedical Data</i> <u>Raquel Aoki</u> , Yizhou Chen, Martin Ester	
10:10-10:25	<i>BaySyn: Bayesian Evidence Synthesis for Multi-system Multiomic Integration</i> <u>Rupam Bhattacharyya</u> , Nicholas Henderson, Veerabhadran Baladandayuthapani	
10:25-10:40	<i>Multi-objective prioritization of genes for high-throughput functional assays towards improved clinical variant classification</i> <u>Yile Chen</u> , Shantanu Jain, Daniel Zeiberg, Lilia M. Iakoucheva, Sean D. Mooney, Predrag Radivojac, Vikas Pejaver	
10:40-10:55	<i>An Approach to Identifying and Quantifying Bias in Biomedical Data</i> <u>M. Clara De Paolis Kaluza</u> , Shantanu Jain, Predrag Radivojac	
10:55-11:10	<i>Development and application of a computable genotype model in the GA4GH Variation Representation Specification</i> <u>Wesley Goar</u> , Lawrence Babb, Srikar Chamala, Melissa Cline, Robert R Freimuth, Reece K Hart, Kori Kuzma, Jennifer Lee, Tristan Nelson, Andreas Prlić, Kevin Riehle, Anastasia Smith, Kathryn Stahl, Andrew D Yates, Heidi L Rehm, Alex H Wagner	
11:10-11:25	<i>Exploiting Domain Knowledge as Causal Independencies in Modeling Gestational Diabetes</i> Saurabh Mathur, Athresh Karanam, Predrag Radivojac, David M. Haas, Kristian Kersting, <u>Sriraam Natarajan</u>	
11:25-11:40	<i>Trans-Omic Knowledge Transfer Modeling Infers Gut Microbiome Biomarkers of Anti-TNF Resistance in Ulcerative Colitis</i> Alan Trinh, Ran Ran, <u>Douglas Brubaker</u>	
11:40-11:55	<i>Predictive modeling using shape statistics for interpretable and robust quality assurance of automated contours in radiation treatment planning</i> <u>Zachary Wooten</u> , Cenji Yu, Laurence Court, Christine Peterson	
Poster Session Lunch		Salon 1 and Ballroom Courtyard
11:55-2:00	Poster Session with Lunch (Posters on ODD numbered boards presented from 12:30-1:15) (Posters on EVEN numbered boards presented from 1:15-2:00)	

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Thursday, January 5, 2023 (continued)

Session 3

Salon 2&3

Towards Ethical Biomedicine

Co-chairs: Peter Y. Washington, Dennis P. Wall, Steven E. Brenner, Gamze Gürsoy, Nicholas P. Tatonetti

2:00-2:10 Introduction

2:10-2:30 Invited Talk: Graciela Gonzalez-Hernandez, Cedars-Sinai

2:30-2:45 *The Effect of AI-Enhanced Breast Imaging on the Caring Radiologist-Patient Relationship*
Arianna Bunnell, Sharon Rowe

2:45-3:00 *Federated Learning for Sparse Bayesian Models with Applications to Electronic Health Records and Genomics*

Brian Kidd, Kunbo Wang, Yanxun Xu, Yang Ni

3:00-3:15 *Not in my AI: Moral engagement and disengagement in health care AI development*

Ariadne A. Nichol, Meghan C. Halley, Carole A. Federico, Mildred K. Cho, Pamela L. Sankar

3:15-3:30 *Algorithmic Fairness in the Roberts Court Era*

Jennifer Wagner

Discussion Session

Salon 2&3

3:30-4:30 Towards Ethical Biomedicine

4:30-5:30 Precision Medicine: Using Artificial Intelligence to Improve Diagnostics and Healthcare

Dinner

5:30- Dinner & Evening on own

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Friday, January 6, 2023

Breakfast		Ballroom Courtyard
7:30-8:30	PSB Breakfast	
Announcements		Salon 2&3
8:30-8:40	Morning Announcements – Marylyn Ritchie	
TERI Talks		Salon 2&3
8:40-9:10	Vijay Pandurangan, Seed and Series A Investor	
9:10-9:40	Jason Moore, Cedars Sinai Hospital Los Angeles	
Session 4		Salon 2&3
	Graph Representations and Algorithms in Biomedicine	
	Co-chairs: Brianna Chrisman, Cliff Joslyn, Maya Varma, Sepideh Maleki, Maria Brbic, Marinka Zitnik	
9:40-9:50	Introduction	
9:50-10:05	<i>Prediction of Kinase-Substrate Associations Using The Functional Landscape of Kinases and Phosphorylation Sites</i> Marzieh Ayati, Serhan Yilmaz, Filipa Blasco Tavares Pereira Lopes, Mark Chance, Mehmet Koyuturk	
10:05-10:20	<i>A Graph Coarsening Algorithm for Compressing Representations of Single-Cell Data with Clinical or Experimental Attributes</i> Chi-Jane Chen, Emma Crawford, Natalie Stanley	
10:20-10:35	<i>Mutual interactors as a principle for phenotype discovery in molecular interaction networks</i> Sabri Eyuboglu, Marinka Zitnik, Jure Leskovec	
10:35-10:50	<i>Contrastive learning of protein representations with graph neural networks for structural and functional annotations</i> Jiaqi Luo, Yunan Luo	
10:50-11:05	<i>Graph algorithms for predicting subcellular localization at the pathway level</i> Chris S Magnano, Anthony Gitter	
11:05-11:20	<i>Efficient Reconstruction of Stochastic Pedigrees: Some Steps from Theory to Practice</i> Elchanan Mossel, David Vulakh	
11:20-11:35	<i>Selecting Clustering Algorithms for Identity-By-Descent Mapping</i> Ruhollah Shemirani, Gillian M. Belbin, Keith Burghardt, Kristina Lerman, Christy L. Avery, Eimear E. Kenny, Christopher R. Gignoux, Jose-Luis Ambite	
11:35-11:50	<i>Time-aware Embeddings of Clinical Data using a Knowledge Graph</i> Karthik Soman, Charlotte A. Nelson, Gabriel Ceron, Sergio E. Baranzini	
Discussion Session		Salon 2&3
11:50-12:50	Graph Representations and Algorithms in Biomedicine	
Lunch		
12:50-5:30	Lunch and Afternoon on Own (Networking Time)	
Dinner		Coconut Grove
5:30-7:25	PSB Dinner Banquet	
Keynote		Coconut Grove
7:25-8:30	Data as Power: The Next 100 Generations of Indigenous Data Sovereignty Keolu Fox with introduction by Larry Hunter	

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Saturday, January 7, 2023

Breakfast 7:30-8:30	Breakfast	Ballroom Courtyard
Closing 8:30-8:40	Closing Announcements – Larry Hunter	Salon 2&3
Session 5 8:40-8:50 8:50-9:10 9:10-9:25 9:25-9:40 9:40-9:55	Digital health technology data in biocomputing: Research efforts and considerations for expanding access Co-chairs: Jessilyn Dunn, Michelle Holko, Chris Lunt Introduction Invited Talk: Larry Gold, SomaLogic <i>Detection of Mild Cognitive Impairment from Language Markers with Crossmodal Augmentation</i> Guangliang Liu, Zhiyu Xue, Liang Zhan, Hiroko Dodge, <u> Jiayu Zhou </u> <i>Risk for Poor Post-Operative Quality of Life Among Wearable Use Subgroups in an All of Us Research Cohort</i> <u> Nidhi Soley </u> , Shanshan Song, Natalie Flaks-Manov, Casey Overby Taylor <i>Feasibility of Using an Armband Optical Heart Rate Sensor in Naturalistic Environment</i> <u> Hang Yu </u> , Michael Kotlyar, Sheena Dufresne, Paul Thuras, Serguei Pakhomov	Salon 2&3
Discussion Session 9:55-10:55	Digital health technology data in biocomputing: Research efforts and considerations for expanding access	Salon 2&3
Session 6 11:00-11:10 11:10-11:30 11:30-11:45 11:45-12:00 12:00-12:15	SALUD: Scalable Applications of cLinical risk Utility and preDiction Co-chairs: Shefali S. Verma, Rachel L. Kember, Renae Judy, Marijana Vujkovic, Olivia J. Veatch, Yoson Park, Pankhuri Singhal, Yogasudha Veturi Introduction Invited Talk: Brian Yaspan, Genentech <i>Polygenic resilience score may be sensitive to preclinical Alzheimer's disease changes</i> <u> Jaclyn M. Eissman </u> , Greyson Wells, Omair A. Khan, Dandan Liu, Vladislav A Petyuk, Katherine A. Gifford, Logan Dumitrescu, Angela L. Jefferson, Timothy J. Hohman <i>Predictive models for abdominal aortic aneurysms using polygenic scores and PheWAS-derived risk factors</i> <u> Jacklyn N. Hellwege </u> , Chad Dorn, Marguerite R. Irvin, Nita A. Limdi, James Cimino, T. Mark Beasley, Philip S. Tsao, Scott M. Damrauer, Dan M. Roden, Digna R. Velez Edwards, Wei-Qi Wei, Todd L. Edwards <i>Diversity is key for cross-ancestry transferability of glaucoma genetic risk scores in Hispanic Veterans in the Million Veteran Program</i> <u> Andrea R. Waksmunski </u> , Tyler G. Kinzy, Lauren A. Cruz, Cari L. Nealon, Christopher W. Halladay, Scott A. Anthony, Paul B. Greenberg, Jack M. Sullivan, Wen-Chih Wu, Sudha K. Iyengar, Dana C. Crawford, Neal S. Peachey, Jessica N. Cooke Bailey, Consortium Author: VA Million Veteran Program	Salon 2&3
Discussion Session 12:15-12:35 12:35-1:15	SALUD: Scalable Applications of cLinical risk Utility and prediction <i>Insights into patient heterogeneity and identification of novel loci using a combination of clinical trials and publicly available data</i> Invited Speaker: Brian Yaspan, Genentech Discussion and Panel Session	Salon 2&3

PSB over--see you next year!

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