

# Pacific Symposium on Biocomputing 2018

January 3-7, 2018

Big Island of Hawaii

## Program Book



# PACIFIC SYMPOSIUM ON BIOCOMPUTING 2018

*Big Island of Hawaii, January 3-7, 2018*

Welcome to PSB 2018!

We have prepared this program book to give you quick access to information you need for PSB 2018.

Enclosed you will find

- Logistics information
- Menus for PSB hosted meals
- Full conference schedule
- Call for Session and Workshop Proposals for PSB 2019
- Poster/abstract titles and authors
- Participant List

Conference materials are also available online at <http://psb.stanford.edu/conference-materials/>.

PSB 2018 gratefully acknowledges the support the Institute for Computational Biology, a collaborative effort of Case Western Reserve University, the Cleveland Clinic Foundation, and University Hospitals; Pfizer; the Institute for Informatics (I2), Washington University School of Medicine; the National Institutes of Health (NIH); and the International Society for Computational Biology (ISCB). If you or your institution are interested in sponsoring, PSB, please contact Tiffany Murray at [psb.hawaii@gmail.com](mailto:psb.hawaii@gmail.com)

If you have any questions, the PSB registration staff (Tiffany Murray, Kasey Miller, BJ Morrison-McKay, and Cindy Paulazzo) are happy to help you.

Aloha!

Russ Altman  
Keith Dunker  
Larry Hunter  
Teri Klein  
Maryln Ritchie

The PSB 2018 Organizers

# PACIFIC SYMPOSIUM ON BIOCOMPUTING 2018

*Big Island of Hawaii, January 3–7, 2018*

## SPEAKER INFORMATION

Oral presentations of accepted proceedings papers will take place in Salon 2 & 3. **Speakers are allotted 10 minutes for presentation and 5 minutes for questions for a total of 15 minutes. Instructions for uploading talks were sent to authors with oral presentations.** If you need assistance with this, please see Tiffany Murray or another PSB staff member.

## POSTER INFORMATION

Please set up your poster upon arrival. Please use the easel marked with the same number that your poster abstract has been assigned in abstract book (e.g., if your abstract is on page 50 of the book, use the easel marked #50). Once your poster is displayed, please make sure that the number is still visible. *Please remove your poster by 8:00pm, Saturday, January 6.*

**The poster session is on Friday, January 5 12:00-2:30.**

12:30-1:30: Posters on ODD numbered boards presented.

1:30-2:30: Posters on EVEN numbered boards presented.

The poster session is centered around lunch. Please eat, talk, and network.

## INTERNET CONNECTIVITY

***Please help keep the PSB wireless network stable: Do not download large data files due to limited bandwidth.***

PSB is connected to the Internet via a secure wireless network for the conference. For transferring your data/presentations or technical difficulties with the network, please see PSB IT/AV staff members Al Conde, Ryan Whaley, or Paul Murray.

To connect to the PSB wireless network, you will need to explicitly join the “PSB” SSID, and use the passphrase “orcpsb123” with WPA2-Personal security type and AES encryption.

PSB’s wireless Internet access (802.11b/g/n) is available in the Salons 1, 2, 3, the Plaza Ballroom, and the Ballroom Courtyard of the Fairmont Orchid.

# **PACIFIC SYMPOSIUM ON BIOCOMPUTING 2018**

*Big Island of Hawaii, January 3-7, 2018*

## **PSB 2018 HOSTED RECEPTIONS & MEALS**

### **Wednesday, January 3**

7:30-8:30pm 23rd Anniversary Reception, Kilohana Room (near Concierge)  
*Sponsored by Case Western Reserve University, the Cleveland Clinic Foundation, and University Hospitals*

### **Thursday, January 4**

7:30-8:30am Continental Breakfast, Ballroom Courtyard  
11:45-1:00pm PSB Hosted Lunch, Ballroom Courtyard

### **Friday, January 5**

7:30-8:30am Continental Breakfast, Ballroom Courtyard  
12:00-2:30pm Poster Session with Lunch, Salon 1 and Ballroom Courtyard

### **Saturday, January 6**

7:30-8:30am Continental Breakfast, Ballroom Courtyard  
5:30-7:30pm Hawaii Loa Luau, Plantation Estate

### **Sunday, January 7**

7:30-8:30am Continental Breakfast, Ballroom Courtyard

**Please remember to wear your PSB nametag & lanyard at all PSB functions.**

Enjoy the conference!

**Pacific Symposium on Biocomputing 2018  
Hosted Meal Menus**

**Wednesday, January 3**

**23<sup>rd</sup> Anniversary Reception (7:30-8:30pm, Kilohana Room)**

Wine, beer, champagne, soft drinks, coffee & tea service  
Chocolate Chantilly Cake, Coconut Whipped Cream, Hawaiian Sea Salt Caramel  
Island Pineapple Crumble Tart, Koloa Rum Sauce  
Local Seasonal Tropical Fruits

**Thursday, January 4**

**Breakfast (7:30am-8:30am, Ballroom Courtyard)**

Orange Juice, Guava Juice & Pineapple Juice  
Selection of Sliced Seasonal Fruits  
Island Breakfast Scones: Papaya Ginger, Pineapple Vanilla & Kabocha Pumpkin  
Sweet Cream Butter & Tropical Fruit Preserves  
Selection of Dry Cereals, Muesli, with Fat Free Milk, Soy & Almond Milk, Raisins, Brown Sugar  
Kohala Muffin: Sausage, Egg, American Cheese, English Muffin (vegetarian option available)  
Coffee, Decaffeinated Coffee & Fairmont Signature Teas

**Lunch (11:45am-1:00pm, Ballroom Courtyard)**

Island Field Green Salad: Crisp Cucumber, Vine Ripened Tomato, Shaved Maui Onion  
Papaya Seed Dressing, Yuzu Soy Vinaigrette  
Waimea Tomato, Marinated Artichoke Salad

Dim Sum Station: Char Siu Bao, Island Style Chicken Pot stickers, Edamame Pot Stickers, Pork Siu Mai, Shrimp Siu Mai

Micro Steam Buns & Hoisin Kalua Pork  
Island Seafood Skewers with Shrimp, Scallops, Fresh Catch, Thai Basil-Curry Sauce  
Herb-Garlic Marinated Beef Tenderloin Medallions, Ali'i Mushroom-Red Wine Jus  
Roasted Kabocha, Grilled Asparagus Tips, Olive Oil Roasted Tomatoes, Mac Nut Pesto  
Kim Chee & Vegetable Fried Rice

Dark Chocolate Brownies  
Angel Food Cake, Waimea Strawberries  
Mango Ginger Crumble  
Freshly Brewed Iced Tea and Lemonade

**Friday, January 5**

**Breakfast (7:30am-8:30am, Ballroom Courtyard)**

Orange Juice, Guava Juice & Pineapple Juice  
Island Fruit Breads, Freshly Baked Croissants, Danishes, Muffins  
Assorted Sliced Bread, Bagels, Cream Cheese  
Tropical Fruit Preserves, Butter  
Selection of Sliced Seasonal Fruits  
Selection of Dry Cereals, Muesli, with Fat Free Milk, Soy & Almond Milk, Raisins, Brown Sugar  
Yogurt Bar with Assorted Fruit Yogurts, Mango, Strawberries, Bananas, Mac Nut Granola  
Macadamia Nut Pancakes  
Chicken Sausage  
Cherrywood Smoked Bacon  
Coffee, Decaffeinated Coffee & Fairmont Signature Teas

**Lunch (12:00pm-2:30pm, Ballroom Courtyard)**

Island Romaine, Croutons, Shaved Parmesan, Caesar Dressing  
Seasonal Tropical Fruit Display  
Waimea Green Bean, Roasted Pepper Salad  
Pineapple, Cabbage Slaw  
Roasted Onion, Bacon, Sweet Potato Salad  
Cheddar Cheese Corn Muffins, Butter

**Pacific Symposium on Biocomputing 2018  
Hosted Meal Menus**

Kiawe Smoked Brisket, Lilikoi Barbeque Sauce, Lime Cilantro Wasabi Cream  
Huli Huli Chicken, Mango Glaze, Scallions  
Teriyaki Glazed Grilled Island Catch, Edamame, Grilled Pineapple Salsa  
Warm Soba Noodles, Charred Brussel Sprouts, Pickled Hamakua Mushrooms, Crispy Tofu  
Paniolo Braised Beans, Portuguese Sausage, Molasses  
Double Stuffed Baked Potato, Cheddar Cheese, Green Onions  
Grilled Seasonal Vegetables

Assorted Haagen Dazs Ice Cream Bars and Frozen Fruit Bars  
Freshly Brewed Iced Tea & Lemonade  
Beer and wine

**Saturday, January 6**

**Breakfast (7:30am-8:30am, Ballroom Courtyard)**

Orange Juice, Guava Juice & Pineapple Juice  
Selection of Sliced Seasonal Fruits  
Malasadas: Plain, Guava, Chocolate  
Sweet Cream Butter & Tropical Fruit Preserves  
Selection of Dry Cereals, Muesli, with Fat Free Milk, Soy Milk & Almond Milk, Raisins, Brown Sugar  
Hilo Sunrise Wrap: Egg, Chorizo, Cheddar Cheese & Cilantro served with Mango-Pineapple Salsa  
(vegetarian option available)  
Coffee, Decaffeinated Coffee & Fairmont Signature Teas

**Keynote Refreshments (11-11:30am in Salon 2&3)**

Mimosas  
Crispy Chips, Mango-Pineapple Salsa & Pico de Gallo Salsa

**Hawaii Loa Luau (5:30-7:30pm, Plantation Estate)**

*Sample Menu*

Green Papaya Salad, Cilantro Chili Vinaigrette  
Oka - Marinated Ono in a Coconut Lime Sauce  
Seafood Lu'au: Medley of Seafood with Taro Leaves, Roasted Taro and a Coconut Sauce  
Poisson Cru - Sesame Lime marlin, Oyster Sauce Tuna, Wasabi Tuna  
Papaya Ginger Roast Chicken, Charred Papaya and Onions with a Mango Glaze  
Kalua Pork - Shredded Hawaiian Style Roast Pork  
Fresh Traditional Kauai Poi, Pounded Hanalei Taro Root  
Marinated Mushroom Salad, Artichokes & Tarragon Vinaigrette  
Macadamia Nut Crusted Mahi-Mahi, Caramelized Banana Emulsion  
Taste of Polynesia Dessert Buffet  
Molten Chocolate Lava Cake, Warm Hilo Vanilla sauce

**Sunday, January 7**

**Breakfast (7:30am-8:30am, Ballroom Courtyard)**

Fresh Orange Juice, Guava Juice, Pineapple Juice  
Selection of Sliced Seasonal Fruits  
Island Fruit Breads, Freshly Baked Croissants, Danishes, Muffins  
Assorted Sliced Bread, Bagels, Cream Cheese  
Tropical Fruit Preserves, Butter  
Selection of Dry Cereals, Muesli, Raisins, Brown Sugar, Skim Milk, 2% Milk, Soy Milk  
Yogurt Bar with Assorted Fruit Yogurts, Mango, Strawberries, Bananas, Macadamia Nut Granola  
Scrambled Eggs  
Waimea Vegetarian Egg Scramble  
Cherrywood Smoked Bacon  
Portuguese Sausage  
Artichoke & Red Bliss Potato  
Regular, Decaffeinated Coffee & Fairmont Signature Teas

# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## Wednesday, January 3, 2018

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### Registration

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

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### 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
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### Break

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

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### Break

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

7:30-8:30	23 <sup>rd</sup> Anniversary Reception	Kilohana
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December 13, 2017

# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## Thursday, January 4, 2018

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### Registration

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

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### Breakfast

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

8:30-8:40	Welcome	Salon 2&3
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### 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, Roselie 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

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### Break

10:25-10:45

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### Keynote

10:45-11:45 *Improving Healthcare through Biomedical Data Science*  
Carlos Bustamante with introduction by Russ Altman

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### Lunch

11:45-1:00	PSB Hosted Lunch	Ballroom Courtyard
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December 13, 2017



# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## Thursday, January 4, 2018 *continued*

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<b>Session 2:</b>	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	

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### Special Topics

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

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### Meeting

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

5:30	Dinner on own	
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December 13, 2017

# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## Friday, January 5, 2018

<b>Registration</b>		<b>Ballroom Prefunction</b>
7:30-8:30	Registration	
<b>Breakfast</b>		<b>Ballroom Courtyard</b>
7:30-8:30	PSB Breakfast	
<b>Announcements</b>		<b>Salon 2&amp;3</b>
8:30-8:40	Morning Announcements	
<b>Session 3</b>	Precision Medicine: from diplotypes to disparities towards improved health and therapies	<b>Salon 2&amp;3</b>
	Co-chairs: Bruce Aronow, Steven E. Brenner, Dana C. Crawford, Joshua C. Denny, Alexander A. Morgan	
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	
<b>Discussion Session</b>		<b>Salon 2&amp;3</b>
11:00-12:00	Precision Medicine: from diplotypes to disparities towards improved health and therapies phenotypes	

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December 13, 2017

# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## Friday, January 5, 2018 *continued*

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<b>Poster Session Lunch</b>		<b>Salon 1 and Ballroom Courtyard</b>
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)	
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<b>Session 4</b>	<b>Democratizing Health Data for Translational Research</b>	<b>Salon 2&amp;3</b>
	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	
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<b>Discussion Session</b>		<b>Salon 2&amp;3</b>
4:10-5:10	Democratizing Health Data for Translational Research	
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<b>Break</b>		
5:10-	Dinner & Evening on own	

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December 13, 2017

# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## Saturday, January 6, 2018

<b>Breakfast</b>		<b>Ballroom Courtyard</b>
7:30-8:30	PSB Breakfast	
<b>Announcements</b>		<b>Salon 2&amp;3</b>
8:30-8:40	Morning Announcements	
<b>Session 5:</b>	<b>Challenges of Pattern Recognition in Biomedical Data</b>	<b>Salon 2&amp;3</b>
	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	
<b>Keynote:</b>		<b>Salon 2&amp;3</b>
11:00-12:15	<i>Data Disparities: Discrimination &amp; Equity in Big Data</i>	
	Jennifer Wagner with introduction by Marylyn Ritchie	
<b>Break</b>		
12:15-1:30	Lunch on Own	
<b>Workshop</b>		<b>Salon 2&amp;3</b>
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	

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December 13, 2017

# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## **Saturday, January 6, 2018** *continued*

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### Discussion Session

Salon 2&3

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

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### 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

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*December 13, 2017*

# Pacific Symposium on Biocomputing (PSB) 2018 Schedule

January 3-7, 2018, Big Island of Hawaii

## Sunday, January 7, 2018

<b>Breakfast</b>		<b>Ballroom Courtyard</b>
7:30-8:30	Breakfast	
<b>Closing</b>		<b>Salon 2&amp;3</b>
8:30-8:40	Closing Announcements	
<b>Session 6:</b>	<b>Advances in Text Mining and Visualization for Precision Medicine</b>	<b>Salon 2&amp;3</b>
	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	
<b>Session 7:</b>	<b>Reading Between the Genes: Computational Models to Discover Function and/or Clinical Utility from Noncoding DNA</b>	<b>Salon 2&amp;3</b>
	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	
<b>Discussion Sessions</b>		
11:40-12:40	Reading Between the Genes: Computational Models to Discover Function and/or Clinical Utility from Noncoding DNA	<b>Salon 2&amp;3</b>
11:40-12:40	Text Mining and Visualization for Precision Medicine	<b>Kilohana</b>
<b>PSB over--see you next year!</b>		

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December 13, 2017

## Call for Session Proposals Pacific Symposium on Biocomputing

The Big Island of Hawaii, January 3-7, 2019

This is an invitation to submit proposals for sessions in the 24<sup>th</sup> Pacific Symposium on Biocomputing (PSB), to be held January 3-7, 2019 on the Kohala Coast, the Big Island of Hawaii. PSB will bring together top researchers from the US, the Asian Pacific nations and around the world to exchange research for the presentation of work in databases, algorithms, interfaces, natural language processing, modeling and other computational methods, as applied to biological problems, with emphasis on applications in data-rich areas of molecular biology.

PSB has been designed to be responsive to the need for critical mass in sub-disciplines within biocomputing. For that reason, it is the only meeting whose sessions are defined dynamically each year in response to specific proposals. PSB sessions are organized by leaders in the emerging areas, and targeted to provide a forum for publication and discussion of research in biocomputing's "hot topics." In this way, PSB provides an early forum for serious examination of emerging methods and approaches in this rapidly changing field.

Proposals for such sessions are hereby solicited. A proposal should identify a coherent topic that can be addressed by 3 to 12 papers. For example, a session might bring together papers on alternative approaches to a particular biological question or it might examine the applications of a particular technology in a variety of biological areas. A sample of more than 20 different decisions at previous PSB meetings have included:

- Applications of Genetics, Genomics and Bioinformatics in Drug Discovery
- Challenges of Pattern Recognition in Biomedical Data
- Democratizing Health Data for Translational Research
- Imaging Genomics
- Precision Medicine: from diplotypes to disparities towards improved health and therapies
- Reading Between the Genes: Computational Models to Discover Function and/or Clinical Utility from Noncoding DNA
- Text Mining and Visualization for Precision Medicine

A major goal of PSB is to create productive interaction among the rather different research cultures of computer science and biology. Recognizing that many in the computational community believe the value of a meeting depends on the quality of its review process, every full manuscript submitted to PSB is reviewed by at least two anonymous reviewers, as well as the session organizers and meeting chairs. Accepted papers are distributed in a proceedings volume at the meeting, and are indexed in Medline and other bibliographic databases. However, we also recognize that many potential participants, particularly from the biological community, do not choose to submit full papers to conferences, even with assurance of availability and broad indexing. Therefore, PSB also includes a separate open submission abstract book and open poster presentations in which any registrant can present research.

### **Responsibilities of a session chair**

As a proposer of an accepted session, you will become the session chair. The chair's primary responsibility is to solicit high quality papers for the session, oversee the review, and write a tutorial introduction to your session. You are to solicit manuscripts, have them refereed, collaborate with the conference chairs in determining which manuscripts are to be accepted and structure presentation time in your session. Please contact us at the address below if you have any questions about the obligations entailed in becoming a session organizer.

**Call for Session Proposals  
Pacific Symposium on Biocomputing**

The Big Island of Hawaii, January 3-7, 2019

**Procedure for submitting proposals**

Session proposals can be as short as a single page and should in no case be more than 6 pages. The proposal should:

- Define a specific technical area to be covered.
- Justify why the proposed area is appropriate for PSB. Discuss why the topic is timely and important, and how the topic has been addressed in other conferences or recent publications.
- Argue that there is likely to be sufficient high quality, unpublished material to fill the session, e.g., a list of researchers you intend to solicit for papers. If there are unlikely to be adequate paper submissions, consider applying for a [PSB workshop](#) instead.
- Provide a short autobiographical sketch and an explicit statement that your organization endorses your involvement.
- Proposals must be submitted online at <http://psb.wufoo.com/forms/psb-session-proposal-submission-form/>.

**Important Dates**

February 9, 2018	Proposals Due
March 9, 2018	Notification Regarding the Proposals

Each proposal will be evaluated by the organizing committee. We look forward to your submissions.

**Questions? Please send email to**

**Lawrence Hunter, Ph.D.**

Director, Center for Computational Pharmacology & Computational Bioscience Program  
Professor of Pharmacology (Denver) & Computer Science (Boulder)  
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## **Call for Workshop Proposals Pacific Symposium on Biocomputing**

The Big Island of Hawaii, January 3-7, 2019

This is an invitation to submit proposals for workshops at the 24<sup>th</sup> Pacific Symposium on Biocomputing (PSB), to be held January 3-7, 2019 on the Kohala Coast, the Big Island of Hawaii. PSB will bring together top researchers from the US, the Asian Pacific nations and around the world to exchange research for the presentation of work in databases, algorithms, interfaces, natural language processing, modeling and other computational methods, as applied to biological problems, with emphasis on applications in data-rich areas of molecular biology.

We are soliciting proposals for three hour workshops appropriate to the diverse PSB conference community. Workshops can include: panels of experts on emerging areas of computational biology that are not likely to attract the number of paper submissions required for a session; open discussions of topics important to the computational biology community; or other topics and formats. Workshops at previous PSB meetings have included:

- The Future of Genome-Based Medicine
- Modeling Cell Heterogeneity: from Single-Cell Variations to Mixed Cells Populations
- Training the Next Generation of Quantitative Biologists
- Uncovering the Etiology of Autism Spectrum Disorders: Genomics, Bioinformatics, Environment, Data Collection and Exploration, and Future Possibilities
- Diversity and Disparity in Biomedical Informatics
- Integrating Community-level Data Resources for Precision Medicine Research
- Machine Learning and Deep Analytics for Biocomputing: Call for Better Explainability
- Methods for Examining Data Quality in Healthcare Integrated Data Repositories

### **Responsibilities of a workshop chair**

As a proposer of an accepted workshop, you will become the workshop chair. The chair's primary responsibility is to organize and preside over the presentations related to your workshop.

### **Procedure for submitting proposals**

Proposals can be as short as a single page and should in no case be more than 6 pages. The proposal should:

- Define a specific technical area to be covered, and a format for the workshop.
- Justify why the proposed area is appropriate for PSB. Discuss why the topic is timely and important, and how the topic has been addressed in other conferences or recent publications. Describe why the proposed format is appropriate for the workshop.
- If the workshop proposes invited experts, provide evidence that the experts will attend the workshop. Participants are required to register for the conference, and, unlike sessions, no financial support from the conference is offered to workshop organizers. Emails from potential participants are sufficient.
- Provide a short autobiographical sketch and an explicit statement that your organization endorses your involvement.
- Proposals must be submitted online at <https://psb.wufoo.com/forms/psb-workshop-proposal-submission-form/>.

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# TABLE OF CONTENTS

## PROCEEDINGS PAPERS WITH ORAL PRESENTATION

<b>APPLICATIONS OF GENETICS, GENOMICS AND BIOINFORMATICS IN DRUG DISCOVERY</b> .....	<b>1</b>
CHARACTERIZATION OF DRUG-INDUCED SPLICING COMPLEXITY IN PROSTATE CANCER CELL LINE USING LONG READ TECHNOLOGY .....	2
<i>Xintong Chen, Sander Houten, Kimaada Allette, Robert P. Sebra, Gustavo Stolovitzky, Bojan Losic</i>	
CELL-SPECIFIC PREDICTION AND APPLICATION OF DRUG-INDUCED GENE EXPRESSION PROFILES .....	3
<i>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 T. Dudley</i>	
LARGE-SCALE INTEGRATION OF HETEROGENEOUS PHARMACOGENOMIC DATA FOR IDENTIFYING DRUG MECHANISM OF ACTION .....	4
<i>Yunan Luo, Sheng Wang, Jinfeng Xiao, Jian Peng</i>	
CHEMICAL REACTION VECTOR EMBEDDINGS: TOWARDS PREDICTING DRUG METABOLISM IN THE HUMAN GUT MICROBIOME.....	5
<i>Emily K. Mallory, Ambika Acharya, Stefano E. Rensi, Peter J. Turnbaugh, Roselie A. Bright, Russ B. Altman</i>	
EXTRACTING A BIOLOGICALLY RELEVANT LATENT SPACE FROM CANCER TRANSCRIPTOMES WITH VARIATIONAL AUTOENCODERS.....	6
<i>Gregory P. Way, Casey S. Greene</i>	
<b>CHALLENGES OF PATTERN RECOGNITION IN BIOMEDICAL DATA ORAL PRESENTATION</b> .....	<b>7</b>
LARGE-SCALE ANALYSIS OF DISEASE PATHWAYS IN THE HUMAN INTERACTOME.....	8
<i>Monica Agrawal, Marinka Zitnik, Jure Leskovec</i>	
MAPPING PATIENT TRAJECTORIES USING LONGITUDINAL EXTRACTION AND DEEP LEARNING IN THE MIMIC-III CRITICAL CARE DATABASE.....	9
<i>Brett K. Beaulieu-Jones, Patryk Orzechowski, Jason H. Moore</i>	
AUTOMATED DISEASE COHORT SELECTION USING WORD EMBEDDINGS FROM ELECTRONIC HEALTH RECORDS.....	10
<i>Benjamin S. Glicksberg, Riccardo Miotto, Kipp W. Johnson, Khader Shameer, Li Li, Rong Chen, Joel T. Dudley</i>	
FUNCTIONAL NETWORK COMMUNITY DETECTION CAN DISAGGREGATE AND FILTER MULTIPLE UNDERLYING PATHWAYS IN ENRICHMENT ANALYSES.....	11
<i>Lia X. Harrington, Gregory P. Way, Jennifer A. Doherty, Casey S. Greene</i>	
CAUSAL INFERENCE ON ELECTRONIC HEALTH RECORDS TO ASSESS BLOOD PRESSURE TREATMENT TARGETS: AN APPLICATION OF THE PARAMETRIC G FORMULA.....	12
<i>Kipp W. Johnson, Benjamin S. Glicksberg, Rachel Hodos, Khader Shameer, Joel T. Dudley</i>	

DATA-DRIVEN ADVICE FOR APPLYING MACHINE LEARNING TO BIOINFORMATICS PROBLEMS.....	13
<i>Randal S. Olson, William La Cava, Zairah Mustahsan, Akshay Varik, Jason H. Moore</i>	
HOW POWERFUL ARE SUMMARY-BASED METHODS FOR IDENTIFYING EXPRESSION-TRAIT ASSOCIATIONS UNDER DIFFERENT GENETIC ARCHITECTURES?.....	14
<i>Yogasudha C. Veturi, Marylyn D. Ritchie</i>	
<b>DEMOCRATIZING HEALTH DATA FOR TRANSLATIONAL RESEARCH .....</b>	<b>15</b>
CLINGEN CANCER SOMATIC WORKING GROUP – STANDARDIZING AND DEMOCRATIZING ACCESS TO CANCER MOLECULAR DIAGNOSTIC DATA TO DRIVE TRANSLATIONAL RESEARCH .....	16
<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</i>	
A HEURISTIC METHOD FOR SIMULATING OPEN-DATA OF ARBITRARY COMPLEXITY THAT CAN BE USED TO COMPARE AND EVALUATE MACHINE LEARNING METHODS....	17
<i>Jason H. Moore, Maksim Shestov, Peter Schmitt, Randal S. Olson</i>	
BEST PRACTICES AND LESSONS LEARNED FROM REUSE OF 4 PATIENT-DERIVED METABOLOMICS DATASETS IN ALZHEIMER'S DISEASE .....	18
<i>Jessica D. Tenenbaum, Colette Blach</i>	
<b>IMAGING GENOMICS.....</b>	<b>19</b>
DISCRIMINATIVE BAG-OF-CELLS FOR IMAGING-GENOMICS .....	20
<i>Benjamin Chidester, Minh N. Do, Jian Ma</i>	
DEEP INTEGRATIVE ANALYSIS FOR SURVIVAL PREDICTION.....	21
<i>Chenglong Huang, Albert Zhang, Guanghua Xiao</i>	
GENOTYPE-PHENOTYPE ASSOCIATION STUDY VIA NEW MULTI-TASK LEARNING MODEL.....	22
<i>Zhouyuan Huo, Dinggang Shen, Heng Huang</i>	
CODON BIAS AMONG SYNONYMOUS RARE VARIANTS IS ASSOCIATED WITH ALZHEIMER'S DISEASE IMAGING BIOMARKER .....	23
<i>Jason E. Miller, Manu K. Shivakumar, Shannon L. Risacher, Andrew J. Saykin, Seunggeun Lee, Kwangsik Nho, Dokyoon Kim</i>	
<b>PRECISION MEDICINE: FROM DIPTYPES TO DISPARITIES TOWARDS IMPROVED HEALTH AND THERAPIES.....</b>	<b>24</b>
SINGLE SUBJECT TRANSCRIPTOME ANALYSIS REPRODUCES SIGNED GENE SET FUNCTIONAL ACTIVATION SIGNALS FROM COHORT ANALYSIS OF MURINE RESPONSE TO HIGH FAT DIET.....	25
<i>Joanne Berghout, Qike Li, Nima Pouladi, Jianrong Li, Yves A. Lussier</i>	
USING SIMULATION AND OPTIMIZATION APPROACH TO IMPROVE OUTCOME THROUGH WARFARIN PRECISION TREATMENT .....	26
<i>Chih-Lin Chi, Lu He, Kourosh Ravvaz, John Weissert, Peter J. Tonellato</i>	

COALITIONAL GAME THEORY AS A PROMISING APPROACH TO IDENTIFY CANDIDATE AUTISM GENES.....	27
<i>Anika Gupta, Min Woo Sun, Kelley M. Paskov, Nate T. Stockham, Jae-Yoon Jung, Dennis P. Wall</i>	
CONSIDERATIONS FOR AUTOMATED MACHINE LEARNING IN CLINICAL METABOLIC PROFILING: ALTERED HOMOCYSTEINE PLASMA CONCENTRATION ASSOCIATED WITH METFORMIN EXPOSURE.....	28
<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></i>	
ADDRESSING VITAL SIGN ALARM FATIGUE USING PERSONALIZED ALARM THRESHOLDS.....	29
<i>Sarah Poole, Nigam Shah</i>	
EMERGENCE OF PATHWAY-LEVEL COMPOSITE BIOMARKERS FROM CONVERGING GENE SET SIGNALS OF HETEROGENEOUS TRANSCRIPTOMIC RESPONSES .....	30
<i>Samir Rachid Zaim, Qike Li, A. Grant Schissler, <u>Yves A. Lussier</u></i>	
ANALYZING METABOLOMICS DATA FOR ASSOCIATION WITH GENOTYPES USING TWO- COMPONENT GAUSSIAN MIXTURE DISTRIBUTIONS .....	31
<i>Jason Westra, Nicholas Hartman, Bethany Lake, Gregory Shearer, Nathan Tintle</i>	
<b>READING BETWEEN THE GENES: COMPUTATIONAL MODELS TO DISCOVER FUNCTION AND/OR CLINICAL UTILITY FROM NONCODING DNA.....</b>	<b>32</b>
CONVERGENT DOWNSTREAM CANDIDATE MECHANISMS OF INDEPENDENT INTERGENIC POLYMORPHISMS BETWEEN CO-CLASSIFIED DISEASES IMPLICATE EPISTASIS AMONG NONCODING ELEMENTS.....	33
<i>Jiali Han, Jianrong Li, Ikbel Achour, Lorenzo Pesce, Ian Foster, <u>Haiquan Li</u>, Yves A. Lussier</i>	
NETWORK ANALYSIS OF PSEUDOGENE-GENE RELATIONSHIPS: FROM PSEUDOGENE EVOLUTION TO THEIR FUNCTIONAL POTENTIALS .....	34
<i>Travis S. Johnson, Sihong Li, Johnathan R. Kho, Kun Huang, Yan Zhang</i>	
LEVERAGING PUTATIVE ENHANCER-PROMOTER INTERACTIONS TO INVESTIGATE TWO-WAY EPISTASIS IN TYPE 2 DIABETES GWAS.....	35
<i>Elisabetta Manduchi, Alessandra Chesi, Molly A. Hall, Struan F. A. Grant, Jason H. Moore</i>	
<b>TEXT MINING AND VISUALIZATION FOR PRECISION MEDICINE.....</b>	<b>36</b>
IMPROVING PRECISION IN CONCEPT NORMALIZATION .....	37
<i>Mayla Boguslav, K. Bretonnel Cohen, William A. Baumgartner Jr., Lawrence E. Hunter</i>	
ViSAGE: INTEGRATING EXTERNAL KNOWLEDGE INTO ELECTRONIC MEDICAL RECORD VISUALIZATION .....	38
<i>Edward W. Huang, Sheng Wang, ChengXiang Zhai</i>	
ANNOTATING GENE SETS BY MINING LARGE LITERATURE COLLECTIONS WITH PROTEIN NETWORKS .....	39
<i>Sheng Wang, <u>Jianzhu Ma</u>, Michael Ku Yu, Fan Zheng, Edward W. Huang, Jiawei Han, Jian Peng, Trey Ideker</i>	

## PROCEEDINGS PAPERS WITH POSTER PRESENTATIONS

<b>APPLICATIONS OF GENETICS, GENOMICS AND BIOINFORMATICS IN DRUG DISCOVERY</b>	<b>40</b>
PREDICTION OF PROTEIN-LIGAND INTERACTIONS FROM PAIRED PROTEIN SEQUENCE MOTIFS AND LIGAND SUBSTRUCTURES.....	41
<i>Peyton Greenside, Maureen Hillenmeyer, Anshul Kundaje</i>	
LOSS-OF-FUNCTION OF NEUROPLASTICITY-RELATED GENES CONFERS RISK FOR HUMAN NEURODEVELOPMENTAL DISORDERS.....	42
<i>Milo R. Smith, Benjamin S. Glicksberg, Li Li, Rong Chen, Hirofumi Morishita, Joel T. Dudley</i>	
DIFFUSION MAPPING OF DRUG TARGETS ON DISEASE SIGNALING NETWORK ELEMENTS REVEALS DRUG COMBINATION STRATEGIES.....	43
<i>Jielin Xu, Kelly Regan, Siyuan Deng, William E. Carson III, Philip R.O. Payne, Fuhai Li</i>	
<b>CHALLENGES OF PATTERN RECOGNITION IN BIOMEDICAL DATA.....</b>	<b>44</b>
OWL-NETS: TRANSFORMING OWL REPRESENTATIONS FOR IMPROVED NETWORK INFERENCE.....	45
<i>Tiffany J. Callahan, William A. Baumgartner Jr., Michael Bada, Adrienne L. Stefanski, Ignacio Tripodi, Elizabeth K. White, Lawrence E. Hunter</i>	
AN ULTRA-FAST AND SCALABLE QUANTIFICATION PIPELINE FOR TRANSPOSABLE ELEMENTS FROM NEXT GENERATION SEQUENCING DATA.....	46
<i>Hyun-Hwan Jeong, Hari Krishna Yalamanchili, Caiwei Guo, Joshua, M. Shulman, Zhandong Liu</i>	
IMPROVING THE EXPLAINABILITY OF RANDOM FOREST CLASSIFIER – USER CENTERED APPROACH.....	47
<i>Dragutin Petkovic, Russ B. Altman, Mike Wong, Arthur Vigil</i>	
TREE-BASED METHODS FOR CHARACTERIZING TUMOR DENSITY HETEROGENEITY ...	48
<i>Katherine Shoemaker, Brian P. Hobbs, Karthik Bharath, Chaan S. Ng, Veerabhadran Baladandayuthapani</i>	
<b>DEMOCRATIZING HEALTH DATA FOR TRANSLATIONAL RESEARCH.....</b>	<b>49</b>
IDENTIFYING NATURAL HEALTH PRODUCT AND DIETARY SUPPLEMENT INFORMATION WITHIN ADVERSE EVENT REPORTING SYSTEMS.....	50
<i>Vivekanand Sharma, Indra Neil Sarkar</i>	
DEMOCRATIZING DATA SCIENCE THROUGH DATA SCIENCE TRAINING.....	51
<i>John Darrell Van Horn, Lily Fierro, Jeana Kamdar, Jonathan Gordon, Crystal Stewart, Avnish Bhattra, Sumiko Abe, Xiaoxiao Lei, Caroline O’Driscoll, Aakanchha Sinha, Priyambada Jain, Gully Burns, Kristina Lerman, José Luis Ambite</i>	
<b>IMAGING GENOMICS.....</b>	<b>52</b>
HERITABILITY ESTIMATES ON RESTING STATE FMRI DATA USING THE ENIGMA ANALYSIS PIPELINE.....	53
<i>Bhim M. Adhikari, Neda Jahanshad, Dinesh Shukla, David C. Glahn, John Blangero, Richard C. Reynolds, Robert W. Cox, Els Fieremans, Jelle Veraart, Dmitry S. Novikov, Thomas E. Nichols, L. Elliot Hong, Paul M. Thompson, Peter Kochunov</i>	

MRI TO MGMT: PREDICTING METHYLATION STATUS IN GLIOBLASTOMA PATIENTS USING CONVOLUTIONAL RECURRENT NEURAL NETWORKS.....	54
<i>Lichy Han, Maulik R. Kamdar</i>	
BUILDING TRANS-OMICS EVIDENCE: USING IMAGING AND 'OMICS' TO CHARACTERIZE CANCER PROFILES.....	55
<i>Arunima Srivastava, Chaitanya Kulkarni, Parag Mallick, Kun Huang, Raghu Machiraju</i>	
<b>PRECISION MEDICINE: FROM DILOTYPES TO DISPARITIES TOWARDS IMPROVED HEALTH AND THERAPIES.....</b>	<b>56</b>
LOCAL ANCESTRY TRANSITIONS MODIFY SNP-TRAIT ASSOCIATIONS .....	57
<i>Alexandra E. Fish, Dana C. Crawford, John A. Capra, William S. Bush</i>	
EVALUATION OF PREDIXCAN FOR PRIORITIZING GWAS ASSOCIATIONS AND PREDICTING GENE EXPRESSION .....	58
<i>Binglan Li, Shefali S. Verma, Yogasudha C. Veturi, Anurag Verma, Yuki Bradford, David W. Haas, Marylyn D. Ritchie</i>	
<b>READING BETWEEN THE GENES: COMPUTATIONAL MODELS TO DISCOVER FUNCTION AND/OR CLINICAL UTILITY FROM NONCODING DNA .....</b>	<b>59</b>
PAN-CANCER ANALYSIS OF EXPRESSED SOMATIC NUCLEOTIDE VARIANTS IN LONG INTERGENIC NON-CODING RNA .....	60
<i>Travers Ching, Lana X. Garmire</i>	
<b>TEXT MINING AND VISUALIZATION FOR PRECISION MEDICINE.....</b>	<b>61</b>
GENEDIVE: A GENE INTERACTION SEARCH AND VISUALIZATION TOOL TO FACILITATE PRECISION MEDICINE.....	62
<i>Paul Previde, Brook Thomas, Mike Wong, Emily K. Mallory, Dragutin Petkovic, Russ B. Altman, Anagha Kulkarni</i>	
<b>POSTER PRESENTATIONS</b>	
<b>APPLICATIONS OF GENETICS, GENOMICS AND BIOINFORMATICS IN DRUG DISCOVERY .....</b>	<b>63</b>
CELL-SPECIFIC PREDICTION AND APPLICATION OF DRUG-INDUCED GENE EXPRESSION PROFILES .....	64
<i>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 T. Dudley</i>	
SYSTEMATIC DISCOVERY OF GENOMIC MARKERS FOR CLINICAL OUTCOMES THROUGH COMBINED ANALYSIS OF CLINICAL AND GENOMIC DATA .....	65
<i>Jinho Kim, Hongui Cha, Hyun-Tae Shin, Boram Lee, Jae Won Yun, Joon Ho Kang, Woong-Yang Park</i>	
IDENTIFICATION OF A PREDICTIVE GENE SIGNATURE FOR DIFFERENTIATING THE EFFECTS OF CIGARETTE SMOKING .....	66
<i>Gang Liu, Justin Li, G.L. Prasad</i>	
THE EXTREME MEMORY® CHALLENGE: A SEARCH FOR THE HERITABLE FOUNDATIONS OF EXCEPTIONAL MEMORY .....	67
<i>Mary A. Pyc, Douglas Fenger, Philip Cheung, J. Steven de Belle, Tim Tully</i>	

EXTRACTING A BIOLOGICALLY RELEVANT LATENT SPACE FROM CANCER TRANSCRIPTOMES WITH VARIATIONAL AUTOENCODERS.....	68
<i>Gregory P. Way, Casey S. Greene</i>	
<b>CHALLENGES OF PATTERN RECOGNITION IN BIOMEDICAL DATA ORAL PRESENTATION .....</b>	<b>69</b>
LARGE-SCALE ANALYSIS OF DISEASE PATHWAYS IN THE HUMAN INTERACTOME.....	70
<i>Monica Agrawal, <u>Marinka Zitnik</u>, Jure Leskovec</i>	
PROFILING OF SOMATIC ALTERATIONS IN BRCA1-LIKE BREAST TUMORS.....	71
<i>Youdinghuan Chen, Yue Wang, Lucas A. Salas, Todd W. Miller, Jonathan D. Marotti, Nicole P. Jenkins, Arminja N. Kettenbach, Chao Cheng, Brock C. Christensen</i>	
USING ARTIFICIAL INTELLIGENCE IN DIGITAL PATHOLOGY TO CLASSIFY MELANOCYTIC LESIONS .....	72
<i>Steven N. Hart, W. Flotte, A.P. Norgan, K.K. Shah, Z.R. Buchan, K.B. Geiersbach, T. Mounajjed, T.J. Flotte</i>	
A MACHINE LEARNING APPROACH TO STUDY COMMON GENE EXPRESSION PATTERNS .....	73
<i>Mingze He, Carolyn J. Lawrence-Dill</i>	
<b>GENERAL .....</b>	<b>74</b>
DATABASE-FREE METAGENOMIC ANALYSIS WITH AKRONYMER.....	75
<i>Gabriel Al-Ghalith, Abigail Johnson, Pajau Vangay, Dan Knights</i>	
SOFTWARE COMPARISON FOR PREPROCESSING GC/LC-MS-BASED METABOLOMICS DATA .....	76
<i>Julian Aldana, Monica Cala Molina, Martha Zuluaga</i>	
GATEKEEPER: A NEW HARDWARE ARCHITECTURE FOR ACCELERATING PRE- ALIGNMENT IN DNA SHORT READ MAPPING.....	77
<i>Mohammed Alser, Hasan Hassan, Hongyi Xin, Oğuz Ergin, <u>Onur Mutlu</u>, Can Alkan</i>	
MODELING THE ENHANCER ACTIVITY THROUGH THE COMBINATION OF EPIGENETIC FACTORS .....	78
<i>MinGyun Bae, Taeyeop Lee, Jaeho Oh, Jun Hyeong Lee, Jung Kyoon Choi</i>	
FREQUENCY AND PROPERTIES OF MOSAIC SOMATIC MUTATIONS IN A NORMAL DEVELOPING BRAIN .....	79
<i>Taejeong Bae, Jessica Mariani, Livia Tomasini, Bo Zhou, Alexander E. Urban, <u>Alexej Abyzov</u>, Flora M. Vaccarino</i>	
CYCLONOVO: DE NOVO SEQUENCING ALGORITHM DISCOVERS NOVEL CYCLIC PEPTIDE NATURAL PRODUCTS IN SUNFLOWER AND CYANOBACTERIA USING TANDEM MASS SPECTROMETRY DATA.....	80
<i>Bahar Behsaz, Hosein Mohimani, Alexey Gurevich, Andrey Prjibelski, Mark F. Fisher, Larry Smarr, Pieter C. Dorrestein, Joshua S. Mylne, Pavel A. Pevzner</i>	
FUNCTIONAL ANNOTATION OF GENOMIC VARIANTS IN STUDIES OF LATE-ONSET ALZHEIMER'S DISEASE.....	81
<i>Mariusz Butkiewicz, Jonathan L. Haines, <u>William S. Bush</u></i>	



OCTAD: AN OPEN CANCER THERAPEUTIC DISCOVERY WORKSPACE IN THE ERA OF PRECISION MEDICINE.....	82
<i>Bin Chen, Benjamin S. Glicksberg, William Zeng, Yuying Chen, Ke Liu</i>	
DEEP LEARNING PREDICTS TUBERCULOSIS DRUG RESISTANCE STATUS FROM WHOLE-GENOME SEQUENCING DATA.....	83
<i>Michael L. Chen, Isaac S. Kohane, Andrew L. Beam, Maha Farhat</i>	
DESIGNING PREDICTION MODEL FOR HYPERURICEMIA WITH VARIOUS MACHINE LEARNING TOOLS USING HEALTH CHECK-UP EHR DATABASE.....	84
<i>Eun Kyung Choe, Sang Woo Lee</i>	
RICK: RNA INTERACTIVE COMPUTING KIT .....	85
<i>Galina A. Erikson, Ling Huang, Maxim Shokhirev</i>	
PRIVATE INFORMATION LEAKAGE IN FUNCTIONAL GENOMICS EXPERIMENTS: QUANTIFICATION AND LINKING .....	86
<i>Gamze Gursoy, Mark Gerstein</i>	
CARPE D.I.E.M: A DATA INTEGRATION EXPECTATION MAP FOR THE POTENTIAL OF MULTI-`OMICS INTEGRATION IN COMPLEX DISEASE .....	87
<i>Tia Tate Hudson, ClarLynda Williams-DeVane</i>	
IMPROVING GENE FUSION DETECTION ACCURACY WITH FUSION CONTIG REALIGNMENT IN TARGETED TUMOR SEQUENCING.....	88
<i>Jin Hyun Ju, Xiao Chen, June Snedecor, Han-Yu Chuang, Ben Mishkanian, Sven Bilke</i>	
SPARSE REGRESSION FOR NETWORK GRAPHS AND ITS APPLICATION TO GENE NETWORKS OF THE BRAIN .....	89
<i>Hideko Kawakubo, Yusuke Matsui, Teppei Shimamura</i>	
GRIM-FILTER: FAST SEED LOCATION FILTERING IN DNA READ MAPPING USING PROCESSING-IN-MEMORY TECHNOLOGIES .....	90
<i>Jeremie S. Kim, Damla S. Cali, Hongyi Xin, Donghyuk Lee, Saugata Ghose, Mohammed Alser, Hasan Hassan, Oğuz Ergin, Can Alkan, Onur Mutlu</i>	
MULTI-CLASS CLASSIFICATION STRATEGY FOR SUPPORT VECTOR MACHINES USING WEIGHTED VOTING AND VOTING DROP .....	91
<i>Sungho Kim, Taehun Kim</i>	
GENOME-WIDE ANALYSIS OF TRANSCRIPTIONAL AND CYTOKINE RESPONSE VARIABILITY IN ACTIVATED HUMAN IMMUNE CELLS .....	92
<i>Sarah Kim-Hellmuth, Matthias Bechheim, Benno Pütz, Pejman Mohammadi, Johannes Schumacher, Veit Hornung, Bertram Müller-Myhsok, Tuuli Lappalainen</i>	
PREDICTING FATIGUE SEVERITY IN ONCOLOGY PATIENTS ONE WEEK FOLLOWING CHEMOTHERAPY.....	93
<i>Kord M. Kober, Xiao Hu, Bruce A. Cooper, Steven M. Paul, Christine Miaskowski</i>	
SINGLE-MOLECULE PROTEIN IDENTIFICATION BY SUB-NANOPORE SENSORS.....	94
<i>Mikhail Kolmogorov, Eamonn Kennedy, Zhuxin Dong, Gregory Timp, Pavel A. Pevzner</i>	
GENE EXPRESSION PROFILE OF OSTEOARTHRITIS AFFECTED FINGER JOINTS .....	95
<i>Milica Krunic, Klaus Bobacz, Arndt von Haeseler</i>	

DISCOVERY AND PRIORITIZATION OF DE NOVO MUTATIONS IN AUTISM SPECTRUM DISORDER.....	96
<i>Taeyeop Lee, Jaeho Oh, MinGyun Bae, Jun Hyeong Lee, Jung Kyoony Choi</i>	
CROSSTALKER: AN OPEN NETWORK AND PATHWAY ANALYSIS PLATFORM.....	97
<i>Sean Maxwell, Mark R. Chance</i>	
SIGNATURES OF NON-SMALL-CELL LUNG CANCER RELAPSE PATIENTS: DIFFERENTIAL EXPRESSION ANALYSIS AND GENE NETWORK ANALYSIS .....	98
<i>Abigail E. Moore, Brandon Zheng, Patricia M. Watson, Robert C. Wilson, Dennis K. Watson, Paul E. Anderson</i>	
RANKING BIOLOGICAL FEATURES BY DIFFERENTIAL ABUNDANCE.....	99
<i>Soumyashant Nayak, Nicholas Lahens, Eun Ji Kim, Gregory Grant</i>	
SYSTEMATIC ANALYSIS OF OBESITY ASSOCIATED VARIATIONS THROUGH MACHINE LEARNING BASED ON GENOMICS AND EPIGENOMICS.....	100
<i>Jaeho Oh, Jun Hyeong Lee, Taeyeop Lee, MinGyun Bae, Jung Kyoony Choi</i>	
SPARSE REGRESSION MODELING OF DRUG RESPONSE WITH A LOCALIZED ESTIMATION FRAMEWORK.....	101
<i>Tepei Shimamura, Hideko Kawakubo, Hyunha Nam, Yusuke Matsui</i>	
PDBMAP: A PIPELINE AND DATABASE FOR MAPPING GENETIC VARIATION INTO PROTEIN STRUCTURES AND HOMOLOGY MODELS.....	102
<i>R. Michael Sivley, John A. Capra, William S. Bush</i>	
REPETITIVE RNA AND GENOMIC INSTABILITY IN HIGH-GRADE SEROUS OVARIAN CANCER PROGRESSION AND DEVELOPMENT.....	103
<i>James R. Torpy, Nenad Bartonicek, David D. L. Bowtell, Marcel E. Dinger</i>	
DIMENSION REDUCTION OF GENOME-WIDE SEQUENCING DATA BASED ON LINKAGE DISEQUILIBRIUM STRUCTURE .....	104
<i>Yun Joo Yoo, Suh-Ryung Kim, Sun Ah Kim, Shelley B. Bull</i>	
THE MULTIPLE GENE ISOFORM TEST.....	105
<i>Yao Yu, Chad D. Huff</i>	
<b>IMAGING GENOMICS.....</b>	<b>106</b>
GENETIC ANALYSIS OF CEREBRAL BLOOD FLOW IMAGING PHENOTYPES IN ALZHEIMER'S DISEASE.....	107
<i>Xiaohui Yao, Shannon L. Risacher, Kwangsik Nho, Andrew J. Saykin, Heng Huang, Ze Wang, Li Shen</i>	
PBRM1 MUTATIONS ARE ASSOCIATED WITH TISSUE MORPHOLOGICAL CHANGES IN KIDNEY CANCER.....	108
<i>Jun Cheng, Jie Zhang, Zhi Han, Liang Cheng, Qianjin Feng, Kun Huang</i>	
IMAGE GENOMICS OF INTRA-TUMOR HETEROGENEITY USING DEEP NEURAL NETWORKS.....	109
<i>Hui Qu, Subhajyoti De, Dimitris Metaxas</i>	
THE NEUROIMAGING INFORMATICS TOOLS AND RESOURCES COLLABORATORY (NITRC) AND ITS IMAGING GENOMICS DOMAIN .....	110
<i>Li Shen, David Kennedy, Christian Haselgrove, Abby Paulson, Nina Preuss, Robert Buccigrossi, Matthew Travers, Albert Crowley, and The NITRC Team</i>	

IDENTIFYING THE GIST OF CNNs: FINDING INTERPRETABLE SIGNATURES OF HISTOLOGY IMAGE MODELS BUILT USING NEURAL NETWORKS .....	111
<i>Arunima Srivastava, Chaitanya Kulkarni, Kun Huang, Parag Mallick, Raghu Machiraju</i>	
<b>PRECISION MEDICINE: FROM DIPTYPES TO DISPARITIES TOWARDS IMPROVED HEALTH AND THERAPIES.....</b>	<b>112</b>
EXPLORING THE POTENTIAL OF EXOME SEQUENCING IN NEWBORN SCREENING.....	113
<i>Steven E. Brenner, Aashish N. Adhikari, Yaqiong Wang, Robert J. Currier, Renata C. Gallagher, Robert L. Nussbaum, Yangyun Zou, Uma Sunderam, Joseph Sheih, Flavia Chen, Mark Kvale, Sean D. Mooney, Raj Srinivasan, Barbara A. Koenig, Pui Kwok, Jennifer M. Puck, The NBSeq Project</i>	
A METHOD FOR IMPROVED VARIANT CALLING AT HOMOPOLYMER MARGINS (AND ELSEWHERE) .....	114
<i>J. Buckley, M. Hiemenz, J. Biegel, T. Triche, A. Ryutov, D. Maglinte, D. Ostrow, X. Gai</i>	
EFFICIENT SURVIVAL MULTIFACTOR DIMENSIONALITY REDUCTION METHOD FOR DETECTING GENE-GENE INTERACTION .....	115
<i>Jiang Gui, Xuemei Ji, Christopher I. Amos</i>	
BIOINFORMATICS PROCESSING STRATEGIES FOR EFFICIENT SEQUENCING DATA STORAGE USING GVCB BANDING.....	116
<i>Nicholas B. Larson, Shannon K. McDonnell, Iain F. Horton, Saurabh Baheti, Jeanette E. Eckel-Passow, Steven N. Hart</i>	
IDENTIFICATION OF A NOVEL TSC2 MUTATION IN A PATIENT WITH TUBEROUS SCLEROSIS COMPLEX .....	117
<i>Jae-Hyung Lee, Su-Kyeong Hwang, Jung-eun Yang, Chae-Seok Lim, Jin-A Lee, Kyungmin Lee, Bong-Kiun Kaang, Yong-Seok Lee</i>	
CONSIDERATIONS FOR AUTOMATED MACHINE LEARNING IN CLINICAL METABOLIC PROFILING: ALTERED HOMOCYSTEINE PLASMA CONCENTRATION ASSOCIATED WITH METFORMIN EXPOSURE.....	118
<i>Alena Orlenko, Jason H. Moore, Patryk Orzechowski, Randal S. Olson, Junmei Cairns, Pedro J. Caraballo, Richard M. Weinshilboum, Liewei Wang, Matthew K. Breitenstein</i>	
PHARMGKB: NEW WEBSITE RELEASE 2017 .....	119
<i>Michelle Whirl-Carrillo, Ryan M. Whaley, Mark Woon, Katrin Sangkuhi, Li Gong, Julia Barbarino, Caroline Thorn, Rachel Huddart, Maria Alvarellos, Jill Robinson, Russ B. Altman, Teri E. Klein</i>	
<b>READING BETWEEN THE GENES: COMPUTATIONAL MODELS TO DISCOVER FUNCTION AND/OR CLINICAL UTILITY FROM NONCODING DNA .....</b>	<b>120</b>
NETWORK ANALYSIS OF PSEUDOGENE-GENE RELATIONSHIPS: FROM PSEUDOGENE EVOLUTION TO THEIR FUNCTIONAL POTENTIALS.....	121
<i>Travis S. Johnson, Sihong Li, Johnathan R. Kho, Kun Huang, Yan Zhang</i>	
RANDOM WALKS ON MUTUAL MICRORNA-TARGET GENE INTERACTION NETWORK IMPROVE THE PREDICTION OF DISEASE-ASSOCIATED MICRORNAS .....	122
<i>Duc-Hau Le, Lieven Verbeke, Le Hoang Son, Dinh-Toi Chu, Van-Huy Pham</i>	

<b>TEXT MINING AND VISUALIZATION FOR PRECISION MEDICINE.....</b>	<b>123</b>
MINING ELECTRONIC HEALTH RECORDS FOR PATIENT-CENTERED OUTCOMES TO GUIDE TREATMENT PATHWAY DECISIONS FOLLOWING PROSTATE CANCER DIAGNOSIS.....	124
<i>Selen Bozkurt, Jung In Park, Daniel L. Rubin, James D. Brooks,         Tina Hernandez-Boussard</i>	
GDMINER: A BIO TEXT MINING SYSTEM FOR GENE-DISEASE RELATION ANALYSIS.....	125
<i>Soo Jun Park, Jihyun Kim, Soo Young Cho, Charny Park, Young Seek Lee</i>	
<b>WORKSHOP .....</b>	<b>126</b>
<b>MACHINE LEARNING AND DEEP ANALYTICS FOR BIOCOMPUTING: CALL FOR BETTER EXPLAINABILITY .....</b>	<b>126</b>
METHODS FOR EXAMINING DATA QUALITY IN HEALTHCARE INTEGRATED DATA REPOSITORIES.....	127
<i>Vojtech Huser, Michael G. Kahn, Jeffrey S. Brown, Ramkiran Gouripeddi</i>	
MULTI-CLASS CLASSIFICATION STRATEGY FOR SUPPORT VECTOR MACHINES USING WEIGHTED VOTING AND VOTING DROP .....	128
<i>Sungho Kim, Taehun Kim</i>	
A TOPOLOGY-BASED APPROACH TO QUANTIFY NETWORK PERTURBATION SCORES FOR ASSESSMENT OF DIFFERENT TOBACCO PRODUCT CLASSES.....	129
<i>Quynh T. Tran, Lee Larcombe, Subhashini Arimilli, G.L. Prasad</i>	
<b>AUTHOR INDEX .....</b>	<b>130</b>

## AUTHOR INDEX

---

### A

Abe, Sumiko · 51  
Abyzov, Alexej · 79  
Acharya, Ambika · 5  
Achour, Ikbel · 33  
Adhikari, Aashish N. · 113  
Adhikari, Bhim M. · 53  
Agrawal, Monica · 8, 70  
Aldana, Julian · 76  
Al-Ghalith, Gabriel · 75  
Alkan, Can · 77, 90  
Allette, Kimaada · 2  
Alser, Mohammed · 77, 90  
Altman, Russ B. · 5, 47, 62, 119  
Alvarellos, Maria · 119  
Ambite, José Luis · 51  
Amos, Christopher I. · 115  
Anderson, Paul E. · 98  
Arimilli, Subhashini · 129

---

### B

Bada, Michael · 45  
Bae, MinGyun · 78, 96, 100  
Bae, Taejeong · 79  
Baheti, Saurabh · 116  
Baladandayuthapani, Veerabhadran · 48  
Barbarino, Julia · 119  
Bartonicsek, Nenad · 103  
Baumgartner Jr., William A. · 37, 45  
Beam, Andrew L. · 83  
Beaulieu-Jones, Brett K. · 9  
Bechheim, Matthias · 92  
Behsaz, Bahar · 80  
Berghout, Joanne · 25  
Bharath, Karthik · 48  
Bhattra, Avnish · 51  
Biegel, J. · 114  
Bilke, Sven · 88  
Blach, Colette · 18  
Blangero, John · 53  
Bobacz, Klaus · 95  
Boguslav, Mayla · 37  
Bowtell, David D. L. · 103  
Bozkurt, Selen · 124  
Bradford, Yuki · 58  
Breitenstein, Matthew K. · 28, 118  
Brenner, Steven E. · 113  
Bright, Roselie A. · 5  
Brooks, James D. · 124  
Brown, Jeffrey S. · 127  
Buccigrossi, Robert · 110

Buchan, Z.R. · 72  
Buckley, J. · 114  
Bull, Shelley B. · 104  
Burns, Gully · 51  
Bush, William S. · 57, 81, 102  
Butkiewicz, Mariusz · 81

---

### C

Cairns, Junmei · 28, 118  
Cali, Damla S. · 90  
Callahan, Tiffany J. · 45  
Capra, John A. · 57, 102  
Caraballo, Pedro J. · 28, 118  
Carson III, William E. · 43  
Cha, Hongui · 65  
Chance, Mark R. · 97  
Chen, Bin · 82  
Chen, Flavia · 113  
Chen, Michael L. · 83  
Chen, Rong · 10, 42  
Chen, Xiao · 88  
Chen, Xintong · 2  
Chen, Youdinghuan · 71  
Chen, Yuying · 82  
Cheng, Chao · 71  
Cheng, Jun · 108  
Cheng, Liang · 108  
Chesi, Alessandra · 35  
Cheung, Philip · 67  
Chi, Chih-Lin · 26  
Chidester, Benjamin · 20  
Ching, Travers · 60  
Cho, Soo Young · 125  
Choe, Eun Kyung · 84  
Choi, Jung Kyoon · 78, 96, 100  
Christensen, Brock C. · 71  
Chu, Dinh-Toi · 122  
Chuang, Han-Yu · 88  
Clark, Neil R. · 3, 64  
Cohen, K. Bretonnel · 37  
Cooper, Bruce A. · 93  
Cox, Robert W. · 53  
Crawford, Dana C. · 57  
Crowley, Albert · 110  
Currier, Robert J. · 113

---

### D

de Belle, J. Steven · 67  
De, Subhajyoti · 109  
Deng, Siyuan · 43  
Dinger, Marcel E. · 103  
Do, Minh N. · 20

Doherty, Jennifer A. · 11  
Dong, Zhuxin · 94  
Dorrestein, Pieter C. · 80  
Duan, Qiaonan · 3, 64  
Dudley, Joel T. · 3, 10, 12, 42, 64

---

## *E*

Eckel-Passow, Jeanette E. · 116  
Ergin, Oğuz · 77, 90  
Erikson, Galina A. · 85

---

## *F*

Farhat, Maha · 83  
Feng, Qianjin · 108  
Fenger, Douglas · 67  
Fieremans, Els · 53  
Fierro, Lily · 51  
Fish, Alexandra E. · 57  
Fisher, Mark F. · 80  
Flotte, T.J. · 72  
Flotte, W. · 72  
Foster, Ian · 33

---

## *G*

Gai, X. · 114  
Gallagher, Renata C. · 113  
Garmire, Lana X. · 60  
Geiersbach, K.B. · 72  
Gerstein, Mark · 86  
Ghose, Saugata · 90  
Glahn, David C. · 53  
Glicksberg, Benjamin S. · 10, 12, 42, 82  
Gong, Li · 119  
Gordon, Jonathan · 51  
Gouripeddi, Ramkiran · 127  
Grant, Gregory · 99  
Grant, Struan F. A. · 35  
Greene, Casey S. · 6, 11, 68  
Greenside, Peyton · 41  
Griffith, Malachi · 16  
Griffith, Obi L. · 16  
Gui, Jiang · 115  
Guo, Caiwei · 46  
Gupta, Anika · 27  
Gurevich, Alexey · 80  
Gursoy, Gamze · 86

---

## *H*

Haas, David W. · 58  
Haines, Jonathan L. · 81  
Hall, Molly A. · 35

Han, Jiali · 33  
Han, Jiawei · 39  
Han, Lichy · 54  
Han, Zhi · 108  
Harrington, Lia X. · 11  
Hart, Steven N. · 72, 116  
Hartman, Nicholas · 31  
Haselgrove, Christian · 110  
Hassan, Hasan · 77, 90  
He, Lu · 26  
He, Mingze · 73  
Hernandez-Boussard, Tina · 124  
Hiemenz, M. · 114  
Hillmeyer, Maureen · 41  
Hobbs, Brian P. · 48  
Hodos, Rachel · 3, 12, 64  
Hong, L. Elliot · 53  
Hornung, Veit · 92  
Horton, Iain F. · 116  
Houten, Sander · 2  
Hu, Jianying · 3, 64  
Hu, Xiao · 93  
Huang, Chenglong · 21  
Huang, Edward W. · 38, 39  
Huang, Heng · 22, 107  
Huang, Kun · 34, 55, 108, 111, 121  
Huang, Ling · 85  
Huddart, Rachel · 119  
Hudson, Tia Tate · 87  
Huff, Chad D. · 105  
Hunter, Lawrence E. · 37, 45  
Huo, Zhouyuan · 22  
Huser, Vojtech · 127  
Hwang, Su-Kyeong · 117

---

## *I*

Ideker, Trey · 39

---

## *J*

Jahanshad, Neda · 53  
Jain, Priyambada · 51  
Jenkins, Nicole P. · 71  
Jeong, Hyun-Hwan · 46  
Ji, Xuemei · 115  
Johnson, Abigail · 75  
Johnson, Kipp W. · 10, 12  
Johnson, Travis S. · 34, 121  
Ju, Jin Hyun · 88  
Jung, Jae-Yoon · 27

---

## *K*

Kaang, Bong-Kiun · 117  
Kahn, Michael G. · 127  
Kamdar, Jeana · 51

Kamdar, Maulik R. · 54  
Kang, Joon Ho · 65  
Kawakubo, Hideko · 89, 101  
Kennedy, David · 110  
Kennedy, Eamonn · 94  
Kettenbach, Arminja N. · 71  
Kho, Johnathan R. · 34, 121  
Kidd, Brian · 3, 64  
Kim, Dokyoon · 23  
Kim, Eun Ji · 99  
Kim, Jeremie S. · 90  
Kim, Jihyun · 125  
Kim, Jinho · 65  
Kim, Suh-Ryung · 104  
Kim, Sun Ah · 104  
Kim, Sungho · 91, 128  
Kim, Taehun · 91, 128  
Kim-Hellmuth, Sarah · 92  
Klein, Teri E. · 119  
Knights, Dan · 75  
Kober, Kord M. · 93  
Kochunov, Peter · 53  
Koenig, Barbara A. · 113  
Kohane, Isaac S. · 83  
Kolmogorov, Mikhail · 94  
Krunic, Milica · 95  
Kulkarni, Anagha · 62  
Kulkarni, Chaitanya · 55, 111  
Kulkarni, Shashikant · 16  
Kundaje, Anshul · 41  
Kvale, Mark · 113  
Kwok, Pui · 113

---

## L

La Cava, William · 13  
Lahens, Nicholas · 99  
Lake, Bethany · 31  
Lappalainen, Tuuli · 92  
Larcombe, Lee · 129  
Larson, Nicholas B. · 116  
Lawrence-Dill, Carolyn J. · 73  
Le, Duc-Hau · 122  
Lee, Boram · 65  
Lee, Donghyuk · 90  
Lee, Hao-Chih · 3, 64  
Lee, Jae-Hyung · 117  
Lee, Jin-A · 117  
Lee, Jun Hyeong · 78, 96, 100  
Lee, Kyungmin · 117  
Lee, Sang Woo · 84  
Lee, Seungeun · 23  
Lee, Taeyeop · 78, 96, 100  
Lee, Yong-Seok · 117  
Lee, Young Seek · 125  
Lei, Xiaoxiao · 51  
Lerman, Kristina · 51  
Leskovec, Jure · 8, 70  
Li, Binglan · 58

Li, Fuhai · 43  
Li, Haiquan · 33  
Li, Jianrong · 25, 33  
Li, Justin · 66  
Li, Li · 10, 42  
Li, Qike · 25, 30  
Li, Sihong · 34, 121  
Lim, Chae-Seok · 117  
Liu, Gang · 66  
Liu, Ke · 82  
Liu, Zhandong · 46  
Losic, Bojan · 2  
Luo, Yunan · 4  
Lussier, Yves A. · 25, 30, 33

---

## M

Ma, Jian · 20  
Ma, Jianzhu · 39  
Ma'ayan, Avi · 3, 64  
Machiraju, Raghu · 55, 111  
Madhavan, Subha · 16  
Maglinte, D. · 114  
Mallick, Parag · 55, 111  
Mallory, Emily K. · 5, 62  
Manduchi, Elisabetta · 35  
Mariani, Jessica · 79  
Marotti, Jonathan D. · 71  
Matsui, Yusuke · 89, 101  
Maxwell, Sean · 97  
McCoy, Matthew · 16  
McDonnell, Shannon K. · 116  
McGarvey, Peter · 16  
Metaxas, Dimitris · 109  
Miaskowski, Christine · 93  
Micheel, Christine · 16  
Miller, Jason E. · 23  
Miller, Todd W. · 71  
Miotto, Riccardo · 10  
Mishkanian, Ben · 88  
Mohammadi, Pejman · 92  
Mohimani, Hosein · 80  
Molina, Monica Cala · 76  
Mooney, Sean D. · 113  
Moore, Abigail E. · 98  
Moore, Jason H. · 9, 13, 17, 28, 35, 118  
Morishita, Hirofumi · 42  
Mounajjed, T. · 72  
Müller-Myhsok, Bertram · 92  
Mustahsan, Zairah · 13  
Mutlu, Onur · 77, 90  
Mylne, Joshua S. · 80

---

## N

Nam, Hyunha · 101  
Nayak, Soumyashant · 99  
Ng, Chaan S. · 48

Nho, Kwangsik · 23, 107  
Nichols, Thomas E. · 53  
Norgan, A.P. · 72  
Novikov, Dmitry S. · 53  
Nussbaum, Robert L. · 113

---

## O

O'Driscoll, Caroline · 51  
Oh, Jaeho · 78, 96, 100  
Olson, Randal S. · 13, 17, 28, 118  
Orlenko, Alena · 28, 118  
Orzechowski, Patryk · 9, 28, 118  
Ostrow, D. · 114

---

## P

Park, Charny · 125  
Park, Jung In · 124  
Park, Soo Jun · 125  
Park, Woong-Yang · 65  
Paskov, Kelley M. · 27  
Paul, Steven M. · 93  
Paulson, Abby · 110  
Payne, Philip R.O. · 43  
Peng, Jian · 4, 39  
Pesce, Lorenzo · 33  
Petkovic, Dragutin · 47, 62  
Pevzner, Pavel A. · 80, 94  
Pham, Van-Huy · 122  
Poole, Sarah · 29  
Pouladi, Nima · 25  
Prasad, G.L. · 66, 129  
Preuss, Nina · 110  
Previde, Paul · 62  
Prjibelski, Andrey · 80  
Puck, Jennifer M. · 113  
Pütz, Benno · 92  
Pyc, Mary A. · 67

---

## Q

Qu, Hui · 109

---

## R

Rachid Zaim, Samir · 30  
Rao, Shruti · 16  
Ravvaz, Kourosh · 26  
Regan, Kelly · 43  
Rensi, Stefano E. · 5  
Reynolds, Richard C. · 53  
Risacher, Shannon L. · 23, 107  
Ritchie, Marylyn D. · 14, 58  
Ritter, Deborah · 16

Robinson, Jill · 119  
Roy, Angshumoy · 16  
Rubin, Daniel L. · 124  
Ryutov, A. · 114

---

## S

Salas, Lucas A. · 71  
Sangkuhi, Katrin · 119  
Sarkar, Indra Neil · 50  
Saykin, Andrew J. · 23, 107  
Schissler, A. Grant · 30  
Schmitt, Peter · 17  
Schumacher, Johannes · 92  
Sebra, Robert P. · 2  
Shah, K.K. · 72  
Shah, Nigam · 29  
Shameer, Khader · 10, 12  
Sharma, Vivekanand · 50  
Shearer, Gregory · 31  
Sheih, Joseph · 113  
Shen, Dinggang · 22  
Shen, Li · 107, 110  
Shestov, Maksim · 17  
Shimamura, Teppei · 89, 101  
Shin, Hyun-Tae · 65  
Shivakumar, Manu K. · 23  
Shoemaker, Katherine · 48  
Shokhirev, Maxim · 85  
Shukla, Dinesh · 53  
Shulman, Joshua, M. · 46  
Sinha, Aakanchha · 51  
Sivley, R. Michael · 102  
Smarr, Larry · 80  
Smith, Milo R. · 42  
Snedecor, June · 88  
Son, Le Hoang · 122  
Sonkin, Dmitriy · 16  
Sontag, David · 3, 64  
Srinivasan, Raj · 113  
Srivastava, Arunima · 55, 111  
Stefanski, Adrienne L. · 45  
Stewart, Crystal · 51  
Stockham, Nate T. · 27  
Stolovitzky, Gustavo · 2  
Sun, Min Woo · 27  
Sunderam, Uma · 113

---

## T

Tenenbaum, Jessica D. · 18  
Thomas, Brook · 62  
Thompson, Paul M. · 53  
Thorn, Caroline · 119  
Timp, Gregory · 94  
Tintle, Nathan · 31  
Tomasini, Livia · 79  
Tonellato, Peter J. · 26



Torpy, James R. · 103  
Tran, Quynh T. · 129  
Travers, Matthew · 110  
Triche, T. · 114  
Tripodi, Ignacio · 45  
Tully, Tim · 67  
Turnbaugh, Peter J. · 5

---

*U*

Urban, Alexander E. · 79

---

*V*

Vaccarino, Flora M. · 79  
Van Horn, John Darrell · 51  
Vangay, Pajau · 75  
Varik, Akshay · 13  
Veraart, Jelle · 53  
Verbeke, Lieven · 122  
Verma, Anurag · 58  
Verma, Shefali S. · 58  
Veturi, Yogasudha C. · 14, 58  
Vigil, Arthur · 47  
von Haeseler, Arndt · 95

---

*W*

Wall, Dennis P. · 27  
Wang, Fei · 3, 64  
Wang, Liewei · 28, 118  
Wang, Sheng · 4, 38, 39  
Wang, Yaqiong · 113  
Wang, Yue · 71  
Wang, Ze · 107  
Wang, Zichen · 3, 64  
Watson, Dennis K. · 98  
Watson, Patricia M. · 98  
Way, Gregory P. · 6, 11, 68  
Weinshilboum, Richard M. · 28, 118  
Weissert, John · 26

Westra, Jason · 31  
Whaley, Ryan M. · 119  
Whirl-Carrillo, Michelle · 119  
White, Elizabeth K. · 45  
Williams- DeVane, ClarLynda · 87  
Wilson, Robert C. · 98  
Wong, Mike · 47, 62  
Woon, Mark · 119

---

*X*

Xiao, Guanghua · 21  
Xiao, Jinfeng · 4  
Xin, Hongyi · 77, 90  
Xu, Jielin · 43

---

*Y*

Yalamanchili, Hari Krishna · 46  
Yang, Jung-eun · 117  
Yao, Xiaohui · 107  
Yoo, Yun Joo · 104  
Yu, Michael Ku · 39  
Yu, Yao · 105  
Yun, Jae Won · 65

---

*Z*

Zeng, William · 82  
Zhai, ChengXiang · 38  
Zhang, Albert · 21  
Zhang, Jie · 108  
Zhang, Ping · 3, 64  
Zhang, Yan · 34, 121  
Zheng, Brandon · 98  
Zheng, Fan · 39  
Zhou, Bo · 79  
Zitnik, Marinka · 8, 70  
Zou, Yangyun · 113  
Zuluaga, Martha · 76

**Pacific Symposium on Biocomputing 2018**

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**Pacific Symposium on Biocomputing 2018**  
**Participants List**  
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**Participants List**  
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**Pacific Symposium on Biocomputing 2018**

**Participants List**

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**Pacific Symposium on Biocomputing 2018**  
**Participants List**  
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**Pacific Symposium on Biocomputing 2018**

**Participants List**

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**Pacific Symposium on Biocomputing 2018**  
**Participants List**  
**(as of December 16, 2017)**

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**Pacific Symposium on Biocomputing 2018**  
**Participants List**  
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**Pacific Symposium on Biocomputing 2018**  
**Participants List**  
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