

17th International Conference on
**Bioinformatics and Computational
Biology (BICOB 2025)**

PROGRAM

March 17 - 18, 2025

Crowne Plaza San Francisco Airport

San Francisco, CA, USA

Sponsored by



International Society for
Computers and Their Applications

278 Mankato Ave. #220
Winona, MN 55987

E-mail: isca@isca-hq.org; website: www.isca-hq.org

Program at a Glance (All times in PST)

Monday 3/17	7:30 am - 8:30 am	Registration and Breakfast (Coffee and Pastry)
	8:30 am – 9:00 am	Opening
	9:00 am –10:00 am	Keynote I: (for BICOB-2025) <i>BICOB'25 Keynote: Driving Discovery in Spatial Proteomics: Protein Sequencing, Domain-Adaptive Imaging, and Generative AI Keynote Speaker: Jacob Luber, UT Arlington. 9:00am Monday March 17 2025 (US Pacific daylight saving time)</i>
	10:00 am – 10:30 am	Coffee Break
	10:30 am -12:00 pm	Session 1: in Plaza Ballroom II Paper ID: 2 Paper ID: 17 Paper ID: 28 Paper ID: 38
	12:00 pm – 1:15 pm Conference Luncheon (Common to both conferences)	
	1:30 pm – 3:00 pm	Session 2: in Plaza Ballroom II Paper ID: 6 Paper ID: 10 Paper ID: 29 Paper ID: 31
	3:00 pm – 3:30 pm	Coffee Break
3:30 pm – 5:30 pm	Session 3: in Plaza Ballroom II Paper ID: 12 Paper ID: 25 Paper ID: 27 Paper ID: 33	

Tuesday 3/18	7:30 am – 8:00 am	Registration and Breakfast (Coffee and Pastry)
	8:00 am – 9:00 am	Keynote II: (Common to both conferences)
	9:00 am – 9:30 am	Coffee Break
	9:30 am -11:30 am	Session 4: in Plaza Ballroom II Paper ID: 4 Paper ID: 7 Paper ID: 11 Paper ID: 26 Paper ID: 32
	12:00 pm	Conference ends

17th International Conference on **Bioinformatics and Computational Biology** (BICOB 2025)

SPONSOR

International Society for Computers and Their Applications (ISCA)

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Evaldo Costa, Dell Technologies, Brazil

Monday, March 17, 2025

All times are in US Central Daylight Time (PDT: UTC-08:00)

7:30 a.m. – 8:45 a.m. **Registration and Breakfast (Coffee and Pastry): Bayside room**

8:45 a.m. – 9:00 a.m. **WELCOME By BICOB Organizers**

Hisham Al-Mubaid, University of Houston-Clear Lake, USA

Oliver Eulenstein, Iowa State University, USA

Tamer Aldwairi, Temple University, USA

9:00 a.m. – 10:00 a.m. **KEYNOTE SPEAKER**

Dr. Jacob Luber

The University of Texas at Arlington, USA

***Driving Discovery in Spatial Proteomics: Protein Sequencing,
Domain-Adaptive Imaging, and Generative AI***

Plaza Ballroom I

Session Chair: Dr. Hisham Al-Mubaid, Univ. of Houston-Clear Lake

10:00 a.m. – 10:30 a.m. **30 MINUTE BREAK**

SESSION 1

**SESSION TITLE: Machine Learning and Neural Networks
in Bioinformatics**

Monday March 17, 10:30 a.m. – 12:00 p.m.

Session Chair: Waqar Haque (University of Northern British Columbia, Canada)

Location: Plaza Ballroom II

- 1. Leveraging a Swarm-Based Deep Neural Network for Modeling the JAK/STAT Pathway, Predicting Gene-Gene Interactions, and Identifying Therapeutic Targets in AML**
Chinyere Ajonu, Robert Grundy, Graham Ball, Dimitrios Zafeiris, David Boocock and Golnaz Shahtahmassebi (Nottingham Trent University, Nottingham, UK; Intelligent Omics Ltd, UK; Anglia Ruskin University, Cambridge, UK)
- 2. DiffNovo: A Transformer-Diffusion Model for De Novo Peptide Sequencing**
Shiva Ebrahimi, Jiancheng Li and Xuan Guo (University of North Texas, Denton, TX, USA)
- 3. Graph Neural Networks Based Explainability of Drug-Target Interactions**
Chandra Mohan Dasari, Dheeraj Kodati, Nivesh Mittapally, Srinivas Reddy A and Krishna Reddy P (Indian Institute of Information Technology, Sri City, Telangana, India; Mahindra University, Hyderabad, Telangana, India; International Institute of Information Technology, Hyderabad,

Telangana, India; GenZ Technologies Pvt. Ltd., Hyderabad, Telangana, India)

4. Explainable Convolutional Neural Network for COVID-19 Detection

Maxwell Sam, Richard Annan, Kristen Rhinhardt, Kaushik Roy, Guoqing Tang and Letu Qingge (North Carolina A&T State University, Greensboro, NC, USA)

12:00 pm – 1:30 pm Conference Luncheon (Bayside room)

SESSION 2

SESSION TITLE: Gene, DNA and Sequence Analysis

Monday March 17, 1:30 p.m. – 3:00 p.m.

Session Chair: Waqar Haque (University of Northern British Columbia, Canada)

Location: Plaza Ballroom II

1. Transitive Reduction and Cluster Normalization for Improved Gene Regulatory Network Inference

Youchuan Wang and Chilukuri K. Mohan (Dept. of Electrical Eng. and Computer Science, Syracuse University, Syracuse, NY, USA)

2. ILP Models for String Partition Considering Intergenic Regions and Indels

Felipe Romeiro, Gabriel Siqueira, Alexandro Oliveira Alexandrino and Zanoni Dias (Universidade Estadual de Campinas, Unicamp, Campinas, Brazil)

3. GDAdaP: A Domain Adaptation Framework for Gene Dependency Prediction in Lung Cancers

Da Tan and Carson Leung (University of Manitoba, Winnipeg, Canada)

4. TREC: Tandem Repeats Errors Correction in Third-Generation Sequencing Data via Bayesian Models and Dynamic Programming

Wangcai Li, Xuwen Wang and Jiayin Wang (School of Computer Science and Technology, Xi'an Jiaotong University, Xi'an, China)

3:00 p.m. – 3:30 p.m.

30 MINUTE BREAK

SESSION 3

SESSION TITLE: Diseases and Machine Learning

Monday March 17, 3:30 p.m. – 5:00 p.m.

Session Chair: Hisham Al-Mubaid (University of Houston-Clear Lake, USA)

Location: Plaza Ballroom II

1. A Novel Dataset and Comprehensive AI Model Evaluation for Masseter Muscle Segmentation

Yunfeng Liang, Lin Zou, Millie Ming Rong Goh, Si Xian Ho, Zhen Jie Zhang, Barbara Helen Rosario, Bharathi Balasundaram, Sindhu John, Saraswathy Suresh Babu, Charlene Jin Yee Liew, Aileen Lim, Andy Wee An Ta and Han Leong Goh (Data Analytics & AI, Synapse Pte, Singapore; Department of Geriatric Medicine, Changi General Hospital, Singapore; Duke-NUS Graduate Medical School, Singapore; NUS Yong Loo Lin School of Medicine, Singapore)

2. **Disease Networks for Disease Clustering using Graph Convolution Networks**
Hisham Al-Mubaid and Tamer Aldwairi (University of Houston – Clear Lake, Houston, USA; Temple University, Philadelphia, USA)
3. **Prediction of Postpartum Depression with Chronic Diseases as Risk Factors**
Febina Rajeesh and Waqar Haque (University of Northern British Columbia, Prince George, Canada)
4. **DRPLLM: A Large Language Model-Based Framework for Predicting Drug Response in Cancer Using Multi-Omics Data**
Rohan Gnanaolivu, Chen Wang, Priyanka Vasanthakumari, Brenna Novotny, Jamie Overbeek, Yuanhang Liu, Alexander Partin, Nicholas Chia and Yitan Zhu (Dept. of Quantitative Health Sciences, Mayo Clinic, Rochester, MN, USA; Data Science and Learning Division, Argonne National Laboratory, Lemont, IL, USA)

Tuesday, March 18, 2025

8:00 a.m. – 9:00 a.m.

KEYNOTE SPEAKER

SPEAKER: Bilal Clarence

Director of Engineering Graph Serving Team at Google

TOPIC: KNOWLEDGE FOR SEARCH AND AI

Location: Plaza Ballroom I

9:00 a.m. – 9:30 a.m.

30 MINUTE COFFEE BREAK

SESSION 4

SESSION TITLE: Bioinformatics Applications

Monday March 18, 9:30 a.m. – 11:30 p.m.

Session Chair: Kazi Lutful Kabir (George Mason University)

Location: Plaza Ballroom II

1. **Modeling Glucose-Insulin Dynamics with Delay Differential Equations**
Fathalla Rihan, Kandasamy Udhayakumar and Mohamed-Naim Anwar (United Arab Emirates University, Al-Ain Abu Dhabi, UAE; Pharos University in Alexandria, Egypt)

- 2. Adverse Effect Analysis for Psychiatric Medication through In-Context Pruning Framework**
Vismaya S, Khushi Jayakumar Patil, Varun B V, Arun Amar Kurali and Bhaskarjyoti Das (Dept. of CSE, PES University, Bangalore, India)
- 3. Beyond AlphaFold: Unraveling FGFR2-related Diseases with Enhanced Computational Workflow**
Yiyang Lian, Dale Bodian and Amarda Shehu (School of Systems Biology, George Mason University, Manassas VA, USA; Diamond Age Data Science, Boston, MA USA; Department of Computer Science, George Mason University, Fairfax, VA, USA,)
- 4. Parallel Implementation of the Stochastic Reaction Diffusion Master Equation**
Md Mustafijur Rahman, Keisha Cook and Roger B. Sidje (University of Alabama, Tuscaloosa, AL, USA; School of Mathematical and Statistical Sciences, Clemson University, Clemson, SC, USA)
- 5. Combining Non-negative Matrix Factorization with Molecular Energy Landscape Analysis for Structure Quality Estimation of Proteins**
Kazi Lutful Kabir (George Mason University)

12:00 p.m. – 12:30 p.m. Best Paper Award Announcement

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