

**15th International Conference on  
Bioinformatics and Computational  
Biology (BICOB 2023)**

**PROGRAM**

March 20, 2023

Sponsored by



**International Society for  
Computers and Their Applications**

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# 15<sup>th</sup> International Conference on **Bioinformatics and Computational Biology** (BICOB 2023)

## **SPONSOR**

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Tamer Aldwairi, Temple University, USA

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Evaldo Costa, Dell Technologies, Brazil

**Monday, March 20, 2023**

All times are in US Central Daylight Time (CDT: UTC-05:00)

8:55 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. Thomas Ioerger**  
Texas A&M University

***TnSeq: Analysis and Applications of Sequencing Transposon insertion Mutant Libraries***

**Session Chair: Dr. Hisham Al-Mubaid, University of Houston-Clear Lake, USA**

10:00 a.m. – 10:05 a.m. **5 MINUTE BREAK**

**SESSION 1**

**SESSION TITLE: Cancer Research**

Monday March 20, 10:05 a.m. – 11:35 a.m.

Session Chair: Oliver Eulenstein (Iowa State University, USA)

- 1. Uncovering the particularities of the dynamical interaction between cancer-related Epithelial-Mesenchymal Transition and the Mammalian Cell Cycle: a feedback-based Boolean networks interconnection approach**  
Luis Juárez-Ramiro (Superior Technological Institute of Teziutlán, Mexico), José Dávila-Velderrain (HumanTechnopole, Italy), Alberto Soria-López (Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico), Elena R. Álvarez-Buylla (The National Autonomous University of Mexico, Mexico) and Juan Carlos Martínez-García (Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico)
- 2. Uncovering the role of mutations in Epithelial-to-Mesenchymal transition through computational analysis of the underlying gene regulatory network**  
Jorge Enrique Narváez-Chávez (OracleGlobalMexico, Mexico), Elena R. Álvarez-Buylla (The National Autonomous University of Mexico, Mexico) and Juan Carlos Martínez-García (Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico)
- 3. An Association Analysis of Breast Cancer with Carotenoids**  
Samuel Neumann (University of Alberta, Canada) and Mohamad El-Hajj (MacEwan University, Canada)

11:35 a.m. – 11:40 a.m. 5 MINUTE BREAK

**SESSION 2**

**SESSION TITLE: Machine Learning in Bioinformatics I**

Monday March 20, 11:40 a.m. – 1:10 p.m.

Session Chair: Tamer Aldwairi (Temple University, USA)

- 1. Transmembrane Protein Inter-Helical Residue Contacts Prediction Using Transductive Support Vector Machines**  
Bander Almalki, Liao Li and Aman Sawhney (University of Delaware, USA)
- 2. Classifying Protein Families with Learned Compressed Representations**  
Ramin Dehghanpoor, Fatemeh Afrasiabi, Charles Fogel, Tung Dao, Suman Gautam, Aanab Nehela, Ahmad Nehela, Daniel Haehn, and Nurit Haspel (University of Massachusetts, USA)
- 3. Biomarker discovery in multi-omics datasets using tensor decompositions; A comprehensive review**  
Farnoosh Koleini, Paul Gemperline and Nasseh Tabrizi (East Carolina University, Greenville, NC, USA)

1:10 p.m. – 1:20 p.m. 10 MINUTE BREAK

**SESSION 3**

**SESSION TITLE: Bioinformatics**

Monday March 20, 1:20 p.m. – 3:20 p.m.

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

- 1. Uncovering the interplay between hypertension and the inflammatory response for the patient affected by Covid 19 through mathematical modeling and computer-based analysis**  
Rosario Pacheco-Marin (The Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico), Carolina Caballero-Cordero (The National Autonomous University of Mexico, Mexico), Jorge Arturo Arciniiega-González (The National Autonomous University of Mexico, Mexico), Elena R. Álvarez-Buylla (The National Autonomous University of Mexico, Mexico) and Juan Carlos Martínez-García (The Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico)
- 2. Utilizing Functional Annotation of Disease Genes for Disease Clustering**  
Hisham Al-Mubaid (University of Houston – Clear Lake, USA) and Tamer Aldwairi (Temple University, USA)
- 3. The Velvet Assembler Using OpenACC Directives**  
Evaldo Costa and Gabriel Silva (The Federal University of Rio de Janeiro, Brazil)
- 4. Clarifying the biological nature of the interaction between the systems-based epigenetic landscape and the epigenome**  
José Luis Caldú-Primo (The National Autonomous University of Mexico, Mexico), José Dávila-Velderrain (HumanTechnopole, Italy), Juan Carlos Martínez-García (Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico) and Elena R. Álvarez-Buylla (The National Autonomous University of Mexico, Mexico)

**3:20 p.m. – 3:30 p.m. Best Paper Award Announcement**

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