

# ACM-BCB 2023

## Main Conference Program Agenda

(version 6b, released on September 4, 2023)

### Program Agenda

- **Regular:**  
25+5 (minutes) oral presentation  
(including all *Patterns* + *iScience* invited submissions for “late-break” highlights)
- **Rapid-fire:**  
18+2 (minutes) oral presentation
- **Highlights:**  
18+2 (minutes) oral presentation
- **Posters:**  
Poster presentation - during **Welcome Reception** on Sep. 4, 2023 (Mon)  
(including all ACM-BCB regular/late-break posters & WABI posters)

### Joint Workshops | Schedule at a glance

#### September 3, 2023 (Sun)

##### Full-day workshops (8AM-5:30PM)

- *The 16th Computational Structural Bioinformatics Workshop (CSBW 2023)*, **Ballroom B**
- *The 8th International Workshop on Computational Network Biology: Modeling, Analysis, and Control (CNB-MAC 2023)*, **Ballroom A**

##### Half-day workshops | Morning (8AM-12PM)

- *Explainable and Biophysically-grounded Models for Genotype-to-Phenotype Mapping*, **Ballroom D**

##### Half-day workshops | Afternoon (1:30PM-5:30PM)

- *Artificial Intelligence and Machine Learning for Predictive Toxicology*, **Ballroom D**
- *Workshop of Large Language Model and Prompting in the Biomedical and Healthcare*, **Ballroom C**

**[Note]** For the detailed workshop schedule, please contact the organizers of each workshop. Thank you.

## September 4, 2023 (Mon)

Time (CDT)	Session 1 (Ballroom A&B)	Session 2 (Ballroom D)
7:30AM	Registration	
8:15 – 8:30 AM	Opening Remarks (Ballroom A&B)	
8:30 – 10:30AM	<b>Session 1A) Comput System Biol (Regular)</b>	<b>Session 1B) Health Informatics (Regular)</b>
10:30 – 10:50 AM	Break	
10:50 AM – 12:10 PM	<b>Session 2A) Highlights</b>	<b>Session 2B) Drug Discovery (RF)</b>
12:10 – 1:20 PM	Lunch & Meeting with Funding Agency	
1:20 – 3:00 PM	<b>Session 3A) ML in Comput Biol (RF)</b>	<b>Session 3B) Monitoring (RF)</b>
3:00 – 3:30 PM	Break	
3:30 – 4:40 PM	<b>Opening Keynote</b>	
5:00 – 6:00 PM	General Assembly & SIGBio General Meeting	
6:00 – 8:00 PM	Poster Session & Reception	

## September 5, 2023 (Tue)

Time (CDT)	Session 1 (Ballroom A&B)	Session 2 (Ballroom D)
8:15 – 10:45 AM	<b>Session 4A) ML for Omics Analyses (Regular)</b>	<b>Session 4B) Biomed Imag Inform (Regular)</b>
10:45 – 11:00 AM	Break	
11:00 AM – 12:00 PM	<b>Keynote 2</b>	
12:00 – 1:20 PM	Lunch & IEEE/ACM TCBB Meeting	
1:20 – 3:00 PM	<b>Session 5A) Comput Biology (RF)</b>	<b>Session 5B) Health Informatics (RF)</b>
3:00 – 3:30 PM	Break	
3:30 – 5:10 PM	<b>Session 6A) Comput. Biol. (RF)</b>	<b>Session 6B) Biomed Imag Informatics (RF)</b>
5:10 – 6:10 PM		NSF Students/Young Professionals Travel Award Info
6:30 – 8:00 PM	Conference Banquet	

## September 6, 2023 (Wed)

Time (CDT)	Session 1 (Ballroom A&B)	Session 2 (Ballroom D)
8:30 – 10:30 AM	<b>Session 7A) Comput System Biology (Regular)</b>	<b>Session 7B) ML in Comput Biol (Regular)</b>
10:30 – 11:00 AM	Break	
11:00 AM – 12:00 PM	<b>Closing Keynote</b>	
12:00 – 1:20 PM	Lunch & Women in Bioinformatics Panel	Best Paper/Poster Award Committee Meeting
1:20 – 3:00 PM	<b>Session 8A) Comput Biology (RF)</b>	<b>Session 8B) Health Informatics (RF)</b>
3:00 – 3:30 PM	Award Ceremony & Closing Remarks (Ballroom A&B)	

## Session 1A (Regular) Computational System Biology I

Time (CDT)	Session 1A
8:30 AM	<b>Generalized Matching Distance: Tumor Phylogeny Comparison Beyond the Infinite Sites Assumption</b> Quoc Nguyen, Layla Oesper
9:00 AM	<b>Formulating a method to analyse the differential expression of co-occurrence networks for small-sampled microbiome data</b> Nandini Amit Gadhia, Michalis Smyrnakis, Po-Yu Liu, Damer Blake, Melanie Hay, Anh Nguyen, Dong Xia, Ritesh Krishna, Dominic Richards
9:30 AM	<b>Dual ICA to extract interacting sets of genes and conditions from transcriptomic data</b> Sanjeevani Choudhery, Thomas Ioerger
10:00 AM	<b>The Impact of Species Tree Estimation Error on Cophylogenetic Reconstruction</b> Julia Zheng, Yuya Nishida, Alicja Okrasińska, Gregory Bonito, Elizabeth A.C. Heath-Heckman, Kevin Liu

**Session Chair:** Prof. Yijie Wang

## Session 1B (Regular) Health Informatics I

Time (CDT)	Session 1B
8:30 AM	<b>Predicting Postoperative Pain and Opioid Use Using Machine Learning Applied to Longitudinal Electronic Health Record and Wearable Data</b> Nidhi Soley, Traci J Speed, Anping Xie, Casey Overby Taylor
9:00 AM	<b>Clinical Trial Active Learning</b> Zoe Fowler, Kiran Premdat Kokilepersaud, Mohit Prabhushankar, Ghassan AlRegib
9:30 AM	<b>Sectioning biomedical abstracts using pointer networks</b> Mehmet Efruz Karabulut
10:00 AM	<b>Adolescent Idiopathic Scoliosis Patient Subphenotyping for Surgical Planning and Improved Patient Outcomes</b> Junior Ben Tamo, Wenqi Shi, Yuanda Zhu, Micky Nnamdi, Henry Iwinski, Michael Wattenbarger, May D. Wang

**Session Chair:** Prof. Peter Elkin

## Session 2A Highlights

Time (CDT)	Session 2A
10:50 AM	<b>A computational approach for the identification of distant homologs of bacterial riboswitches based on inverse RNA folding</b> Sumit Mukherjee, Matan Drory, Sarah Hubbell, Michelle Meyer, Danny Barash
11:10 AM	<b>A SSIM Guided cGAN Architecture For Clinically Driven Generative Image Synthesis of Multiplexed Spatial Proteomics Channels</b> Jillur Rahman Saurav, Mohammad Sadegh Nasr, Helen Shang, Paul Koomey, Michael Robben, Manfred Huber, Jon Weidanz, Brid Ryan, Eytan Ruppim, Peng Jiang, Jacob M Luber
11:30 AM	<b>All-Atom Protein Structure Refinement by SE(3)-Equivariant Graph Transformer sets of genes and conditions from transcriptomic data</b> Tianqi Wu, Zhiye Guo, Jianlin Cheng
11:50 AM	<b>Multi-layer sequential network analysis improves protein 3D structural classification</b> Khalique Newaz, Aydin Wells, Jacob Piland, Patricia Clark, Scott J Emrich, Jun Li, Tijana Milenkovic

**Session Chair:** Prof. Jianlin Cheng

## Session 2B (Rapid Fire) Drug Discovery

Time (CDT)	Session 2B
10:50 AM	<b>Compound RNN to predict MICs using K-Mer Fingerprints and Antibiotic SMILES</b> Cory Kromer-Edwards, Suely Oliveira
11:10 AM	<b>Vulture: VULnerabilities in impuTing drUg Resistance</b> Aysegul Bumin, Megan Shah, Kejun Huang, Tamer Kahveci
11:30 AM	<b>Predicting Drug-drug Interactions Using Heterogeneous Graph Attention Networks</b> Farhan Tanvir, Khaled mohammed Saifuddin, Muhammad Ifta Khairul Islam, Esra Akbas
11:50 AM	<b>Evaluating Drug Effectiveness for Antihypertensives in Heart Failure Prognosis: Leveraging Composite Clinical Endpoints and Biomarkers from Electronic Health Records</b> Shaika Chowdhury, Yongbin Chen, Xiao Ma, Qiyang Dai, Yue Yu, Nansu NA Zong

**Session Chair:** Prof. Tamer Kahveci

## Lunch Meeting with Funding Agency

Time (CDT)	Lunch & Meeting with Funding Agency
12:10 – 1:20 PM	<b>The NHLBI Trans-omics for Precision Medicine Program (TOPMed)</b> James Luo, PhD, Program Director Division of Cardiovascular Sciences, NHLBI, NIH
	<b>Enhancing NIH Data Management and Sharing (DMS) Plans through Large Language Models (LLMs)</b> Veerasamy “Ravi” Ravichandran, PhD, Program Director Division of Digestive Diseases & Nutrition, NIDDK, NIH

**Session Chair:** Prof. May D Wang & Prof. Byung-Jun Yoon

## Session 3A (Rapid Fire) ML in Computational Biology I

Time (CDT)	Session 3A
1:20 PM	<b>An Explainable Deep Neural Network Model for Predicting Allergenic Proteins</b> Emre Sefer
1:40 PM	<b>Phylogenomics using Compression Distances: Incorporating Rate Heterogeneity and Amino Acid Properties</b> Edward Braun
2:00 PM	<b>Machine Learning Methods for Prostate Cancer Diagnosis from Clinical Biomarkers and Personalized Questionnaires</b> Moumen El-melegy, Ahmed Mamdouh, Samia Ali, Mohamed Abou El-Ghar, Ayman El-Baz
2:20 PM	<b>Localized, Non-parametric Detection of RNA Structural Modification using Nanopore Basecalling</b> J White Bear, Grégoire De Bisschop, Éric Lécuyer, Jérôme Waldispühl
2:40 PM	<b>Phase Synchronization in Brain Collective Dynamics</b> Gangadhar Katuri, Epaminondas Rosa Jr, Rosangela Follmann

**Session Chair:** Prof. Kevin Liu

## Session 3B (Rapid Fire) Monitoring

Time (CDT)	Session 3B
1:20 PM	<b>Proteus: Towards a Manageability-focused Home-based Health Monitoring Infrastructure</b> Mengjing liu, Mohammed Elbadry, Yindong Hua, Zongxing Xie, Fan Ye
1:40 PM	<b>Modeling Human Frailty with a Smart Home-Based Approximation of Entropy</b> Katherine A Wuestney, Beiyu Lin, Diane Cook, Roschelle Fritz
2:00 PM	<b>Beyond Motor Symptoms: Toward a Comprehensive Grading of Parkinson's Disease Severity</b> Morteza Rahimi, Zeina Al Masry, John Michael Templeton, Christian Poellabauer, Sandra Schneider
2:20 PM	<b>Choice Over Effort: Mapping and Diagnosing Augmented Whole Slide Image Datasets with Training Dynamics</b> Wenqi Shi, Benoit Louis Marteau, Felipe Giuste, May Dongmei Wang
2:40 PM	<b>Continuous Stress Monitoring for Healthcare Workers: Evaluating Generalizability Across Real-World Datasets</b> Jordan Li Cahoon, Luis Antonio Garcia

Session Chair: Prof. Vikram Ravindra

## Opening Keynote Dr. Teresa M. Przytycka

Time (CDT)	Opening Keynote   Dr. Teresa M. Przytycka
3:30 PM	<b>Delineating relation between mutagenic signatures, cellular processes, and environment through computational approaches</b>

Session Chair: Prof. Aida Ouangraoua

## General Assembly & SIGBio General Meeting

Time (CDT)	
5 PM – 6PM	<b>General Assembly &amp; SIGBio General Meeting (Ballroom A&amp;B)</b>

Session Chair: Prof. May D Wang

## Poster Session & Reception

Time (CDT)	
6 PM – 8PM	<b>Poster Session &amp; Reception (Foyer)</b>

Session Chair: Prof. Yijie Wang

## Session 4A (Regular) ML for Omics Analyses

Time (CDT)	Session 4A
8:15 AM	<b>An Ensemble Machine Learning Approach for Benchmarking and Selection of scRNA-seq Integration Methods</b> Konghao Zhao, Sapan Bhandari, Nathan Whitener, Jason M Grayson, Natalia Khuri
8:45 AM	<b>Root Causal Inference from Single Cell RNA Sequencing with the Negative Binomial</b> Eric Strobl
9:15 AM	<b>MUSTANG: MUlti-sample Spatial Transcriptomics data ANalysis with cross-sample transcriptional similarity Guidance (Late-Break Highlights)</b> Seyednami Niyakan, Jianting Sheng, Yuliang Cao, Xiang Zhang, Zhan Xu, Ling Wu, Stephen T.C. Wong, Xiaoning Qian
9:45 AM	<b>MLGAN: a Meta-Learning based Generative Adversarial Network adapter for rare disease differentiation tasks</b> Rui Li, Andrew Wen, Jing Gao, Hongfang Liu
10:15 AM	<b>Deep learning-based survival prediction using DNA methylation-derived 3D genomic information</b> Jeewon Yang, Dohoon Lee, Bonil Koo, Sun Kim

Session Chair: Prof. Jie Liu

## Session 4B (Regular) Biomedical Imaging Informatics I

Time (CDT)	Session 4B
8:15 AM	<b>A Self-Supervised Learning Approach for Registration Agnostic Imaging Models with 3D Brain CTA (Late-Break Highlights)</b> Yingjun Dong, Samiksha Pachade, Xiaomin Liang, Sunil A Sheth, Luca Giancardo
8:45 AM	<b>May I see what you see? Predicting Visual Features from Neuronal Activity (Late-Break Highlights)</b> Vikram Ravindra, Chih-Hao Fang, Ananth Grama
9:15 AM	<b>FRAMM: Fair Ranking with Missing Modalities for Clinical Trial Site Selection (Late-Break Highlights)</b> Brandon Philip Theodorou, Lucas M Glass, Cao Xiao, Jimeng Sun
9:45 AM	<b>3D Biological/Biomedical Image Registration with enhanced Feature Extraction and Outlier Detection</b> Sahand Hamzehei, Jun Bai, Gianna Raimondi, Rebecca Tripp, Linnaea Ostroff, Sheida Nabavi
10:15 AM	<b>Multi-Group Tensor Canonical Correlation Analysis</b> Zhuoping Zhou, Boning Tong, Davoud Ataee Tarzanagh, Bojian Hou, Andrew Saykin, Qi Long, Li Shen

Session Chair: Prof. Sheida Nabavi

## Keynote 2 Dr. Weida Tong

Time (CDT)	Keynote 2   Dr. Weida Tong
11:00 AM	<b>The Ascent of AI: Predicting Drug-Induced Liver Injury</b>

Session Chair: Prof. Peter Elkin

## Lunch IEEE/ACM TCBB Meeting

Time (CDT)	Lunch & IEEE/ACM TCBB Meeting
12:00 – 1:20 PM	<b>IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB) Meeting</b> Editor-in-Chief: Prof. Srinivas Aluru

**Session Chair:** Prof. Srinivas Aluru

## Session 5A (Rapid Fire) Computational Biology I

Time (CDT)	Session 5A
1:20 PM	<b>A Distributed Alignment-free Pipeline for Human SNPs Genotyping</b> Lorenzo Di Rocco, Umberto Ferraro Petrillo
1:40 PM	<b>Large-scale Dataset and Effective Model for Variant-Disease Associations Extraction</b> Lei Chen, Junhao Su, Zhenxian Zheng, Tak-Wah Lam, Ruibang Luo
2:00 PM	<b>Reconstructing Phylogenies Using Branch-Variable Substitution Models and Unaligned Biomolecular Sequences: A Performance Study and New Resampling Method</b> Rei Doko, Kevin J. Liu
2:20 PM	<b>An Integrative Approach to Building Regulatory Potential-Weighted Gene Regulatory Networks: A Leiomyoma Case Study</b> Brandon Edward Lukas, Yang Dai
2:40 PM	<b>Phylogenetic Placement of Aligned Genomes and Metagenomes with Non-tree-like Evolutionary Histories</b> Md Alamin, Kevin J. Liu

**Session Chair:** Prof. Umberto Ferraro Petrillo

## Session 5B (Rapid Fire) Health Informatics II

Time (CDT)	Session 5B
1:20 PM	<b>SPOT: Sequential Predictive Modeling of Clinical Trial Outcome with Meta-Learning</b> Zifeng Wang, Cao Xiao, Jimeng Sun
1:40 PM	<b>Enabling the Informed Patient Paradigm with Secure and Personalized Medical Question Answering</b> oel Oduro-Afriyie, Hasan Jamil
2:00 PM	<b>Model Confidence Calibration for Reliable COVID-19 Early Screening via Audio Signal Analysis</b> Micky Nnamdi, Junior Ben Tamo, Sara Stackpole, Wenqi Shi, Benoit Marteau, May Wang
2:20 PM	<b>Text-to-ESQ: A Two-Stage Controllable Approach for Efficient Retrieval of Vaccine Adverse Events from NoSQL Database</b> Wenlong Zhang, Kangping Zeng, Xinming Yang, TIAN SHI, Ping Wang
2:40 PM	<b>GRAPPEL: A Graph-based Approach for Early Risk Assessment of Acute Hypertension in Critical Care</b> Sonal Jha, Wu-chun Feng

**Session Chair:** Prof. Natalia Khuri

## Session 6A (Rapid Fire) Computational Biology II

Time (CDT)	Session 6A
3:30 PM	<b>CBOEP: Generating negative enhancer-promoter interactions to train classifiers</b> Tsukasa Koga, Osamu Maruyama
3:50 PM	<b>Quantifying Recombination Bias in Viral Evolution Using Persistent Homology</b> Savik Kinger
4:10 PM	<b>SWOFFinder: Efficient and versatile search of CRISPR off-targets with bulges by Smith-Waterman alignment</b> Ofir Yaish, Amichai Malle, Eliav Cohen, Yaron Orenstein
4:30 PM	<b>AcrTransAct: Pre-trained Protein Transformer Models for the Detection of Type I Anti-CRISPR Activities</b> Moein Hasani, Chantel N. Trost, Nolen Timmerman, Lingling Jin
4:50 PM	<b>On the Maximal Independent Sets of k-mers with the Edit Distance</b> Leran Ma, Ke Chen, Mingfu Shao

Session Chair: Prof. Osamu Maruyama

## Session 6B (Rapid Fire) Biomedical Imaging Informatics II

Time (CDT)	Session 6B
3:30 PM	<b>PINet: Privileged Information Improve the Interpretability and generalization of structural MRI in Alzheimer's Disease</b> Zijia Tang, Tonglin Zhang, Qianqian Song, Jing Su, Baijian Yang
3:50 PM	<b>Strategies to Combine 3D Vasculature and Brain CTA with Deep Neural Networks: application to LVO</b> Uma Maria Lal-Trehan Estrada, Arnau Oliver, Sunil Sheth, Xavier Lladó, Luca Giancardo
4:10 PM	<b>Breast-Density Semantic Segmentation with Probability Scaling for BI-RADS Assessment using DeepLabV3</b> Conrad T Testagrose, Vikash Gupta, Barbaros S Erdal, Richard D White, Robert W Maxwell, Xudong Liu, Indika Kahanda, Sherif Elfayoumy, William Klostermeyer, Mutlu Demirer
4:30 PM	<b>Robust Retinal Layer Segmentation Using OCT B-Scans: A Novel Approach Based on Pix2Pix Generative Adversarial Network</b> Adarsh Gadari, Sandeep Chandra Bollepalli, Mohammed Nasar Ibrahim, Sahel Jose ´-Alian, jay chhablani, Shan Suthaharan, Kiran Kumar Vupparaboina
4:50 PM	<b>Performance Evaluation of Semantic Segmentation Models with and without Attention for White Blood Cells Segmentation</b> Rajshree Jodha, Priyanka Mishra, J.Angel Arul Jothi, sameer saifi, Abhishek Purohit

Session Chair: Prof. Jing Su

## NSF Students/YP Travel Award Info Session

Time (CDT)	
5:10 PM – 6:10PM	NSF Students/Young Professionals Travel Award Info Session (Ballroom D)

Session Chair: Prof. May D Wang

## Banquet

Time (CDT)	
6:30 PM – 8PM	Banquet dinner (Ballroom A&B)



**Session 7A (Regular) Computational System Biology II**

Time (CDT)	Session 7A
8:30 AM	<b>Canonical Representation of Biological Networks Using Graph Convolution</b> Mengzhen Li, Mustafa Coskun, Mehmet Koyutürk
9:00 AM	<b>Retrieval-Augmented Large Language Models for Adolescent Idiopathic Scoliosis Patients in Shared Decision-Making</b> Wenqi Shi, Yuchen Zhuang, Yuanda Zhu, Henry Iwinski, Michael Wattenbarger, Dongmei Wang
9:30 AM	<b>SeqScreen-Nano: a computational platform for streaming, in-field characterization of microbial pathogens</b> Advait Balaji, Yunxi Liu, Michael G. Nute, Bingbing Hu, Anthony D. Kappell, Danielle S. LeSassier, Gene D. Godbold, Krista Ternus, Todd Treangen
10:00 AM	<b>Augmenting nutritional metabolomics with a genome-scale metabolic model for assessment of diet intake</b> Kowshika Sarker, Ruoqing Zhu, Hannah D Holscher, ChengXiang Zhai

**Session Chair:** Prof. Wayne Hayes

**Session 7B (Regular) ML in Computational Biology II**

Time (CDT)	Session 7B
8:30 AM	<b>Predicting A/B compartments from histone modifications using deep learning (Late-Break Highlights)</b> Suchen Zheng, Nitya Thakkar, Hannah L Harris, Susanna Liu, Megan Zhang, Mark Gerstein, Erez Lieberman Aiden, Jordan Rowley, William Noble, Gamze Gursoy, Ritambhara Singh
9:00 AM	<b>Distance-Weighted Sinkhorn Loss: A Novel Approach for Alzheimer's Disease Classification (Late-Break Highlights)</b> Zexuan Wang, Qipeng Zhan, Boning Tong, Heng Huang, Andrew Saykin, Paul M. Thompson, Christos Davatzikos, Li Shen
9:30 AM	<b>RAmbler: de novo genome assembly of complex repetitive regions (Late-Break Highlights)</b> Sakshar Chakravarty, Glennis Logsdon, Stefano Lonardi
10:00 AM	<b>Graphylo: A Deep Learning Approach for Predicting Regulatory DNA and RNA Sites from Whole-Genome Multiple Alignments (Late-Break Highlights)</b> Dongjoon Lim, Changhyun Baek, Mathieu Blanchette

**Session Chair:** Prof. Byung-Jun Yoon

**Closing Keynote Dr. Nora Franceschini**

Time (CDT)	Closing Keynote   Dr. Nora Franceschini
11:00 AM	<b>Genomics and Human Population Diversity</b>

**Session Chair:** Prof. Byung-Jun Yoon

**Lunch Women in Bioinformatics Panel**

Time (CDT)	Lunch & Women in Bioinformatics Panel
12:00 – 1:20 PM	<b>Women in Bioinformatics</b>

**Session Chair:** Prof. May D. Wang & Prof. Wenyi Wang

## Session 8A (Rapid Fire) Computational Biology III

Time (CDT)	Session 8A
1:20 PM	<b>Exploring Pair-Aware Triangular Attention for Biomedical Relation Extraction</b> Lei Chen, Junhao Su, Tak-Wah Lam, Ruibang Luo
1:40 PM	<b>CodonBERT: Using BERT for Sentiment Analysis to Better Predict Genes with Low Expression</b> Ashley Nicole Babjac, Zhixiu Lu, Scott J Emrich
2:00 PM	<b>Deconvolution of cell-free DNA in cancer liquid biopsy using a deep AutoEncoder</b> Felix Jackson
2:20 PM	<b>On <i>de novo</i> Bridging Paired-end RNA-seq Data</b> Xiang Li, Mingfu Shao
2:40 PM	<b>HLAequity: examining biases in pan-allele peptide-HLA binding predictors</b> Anja Conev, Romanos Fasoulis, Sarah Hall-Swan, Rodrigo Ferreira, Lydia E Kavvaki

**Session Chair:** Prof. Xiaoning Qian

## Session 8B (Rapid Fire) Health Informatics III

Time (CDT)	Session 8B
1:20 PM	<b>Can Attention Be Used to Explain EHR-Based Mortality Prediction Tasks: A Case Study on Hemorrhagic Stroke</b> Qizhang Feng, Jiayi Yuan, Forhan Bin Emdad, Karim Hanna, Xia Hu, Zhe He
1:40 PM	<b>TREEMENT: A Tree-based Memory Network for Patient-Trial Matching</b> Brandon Philip Theodorou, Cao Xiao, Jimeng Sun
2:00 PM	<b>A Multi-Layered GRU Model for COVID-19 Patient Representation and Phenotyping from Large-Scale EHR Data</b> Arpita Saha, Maggie Samaan, Bo Peng, Xia Ning
2:20 PM	<b>A Comparison of Machine Learning Models with Data Augmentation Techniques for Skeleton-based Human Action Recognition</b> Chu Xin, Seokhwan Kim, Kyoung Shin Park

**Session Chair:** Prof. Jing He

## Award Ceremony & Closing Remarks

Time (CDT)	
3 PM – 3:30PM	<b>Award Ceremony &amp; Closing Remarks (Ballroom A&amp;B)</b>

**Session Chair:** Profs. May D Wang, Byung-Jun Yoon, Peter Elkin, Xiaoning Qian, Wenyi Wang