BIBE 2014 Conference Program

Registration (Boca Ballroom Foyer)

Sunday: 4:00PM – 7:00PM
Monday: 8:00AM – 4:00PM
Tuesday: 8:00AM – 4:00PM

Speaker Ready Room (Parlor I)

Speaker Preparation & Rehearsal

Monday: 8:00AM – 5:00PM
Tuesday: 8:00AM – 5:00PM
Wednesday: 8:00AM – 11:00AM
Conference Hotel
Boca Raton Marriott at Boca Center
5150 Town Center Circle, Boca Raton, Florida 33486 USA
Phone: 1-561-392-4600  Fax: 1-561-368-9223  Toll-free: 1-888-888-3780
Nov. 10 2014 (Monday)

**Breakfast: 7:30 AM - 8:45 AM (Boca Ballroom Foyer)**

**Conference Opening: 8:45 AM – 9:00 AM**

**Keynote Speech A (Chair: Taghi M. Khoshgoftaar)**
9:00 AM – 10:00 AM (Boca Ballroom)

Building models of cell organization directly from microscope images: New tools for comparison and simulation of cell behavior

**Dr. Robert F. Murphy**

Ray and Stephanie Lane Professor of Computational Biology and Professor of Biological Sciences
Biomedical Engineering and Machine Learning
Carnegie Mellon University, Pittsburgh, USA

**Coffee Break: 10:00 AM – 10:20 AM (Boca Ballroom Foyer)**

**Parallel Morning Sessions (10:20AM-12:00 PM)**

<table>
<thead>
<tr>
<th>Location: Salon A&amp;B</th>
<th>Location: Parlor II&amp;III</th>
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<tbody>
<tr>
<td><strong>Session A: Gene and Network Analysis</strong>&lt;br&gt;Chair: Dingding Wang&lt;br&gt;&lt;em&gt;Regular: 25 minutes each&lt;/em&gt;</td>
<td><strong>Session B: Advanced Learning for Biomedical Data</strong>&lt;br&gt;Chair: Xingquan Zhu&lt;br&gt;&lt;em&gt;Regular: 25 minutes each&lt;/em&gt;</td>
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<tr>
<td>73: Network-based disease gene prioritization by hitting time analysis&lt;br&gt;Leandro de Araujo Lima, Sérgio Simões Nery, David Correa Martins Junior, Ronaldo Fumio Hashimoto, Helena Brentani, Guilherme Oliveira Mota</td>
<td>82: Multi-Block and Multi-Task Learning for Integrative Genomic Study&lt;br&gt;Mingon Kang, Dong-Chul Kim, Chunyu Liu, Baoju Zhang, Xiaoyong Wu, Jean Gao</td>
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<td>2: Multiview clustering on PPI network for gene selection and enrichment from microarray data</td>
<td>51: Analysis of Acoustic Cardiac Signals for Heart Rate Variability and Murmur Detection Using Nonnegative Matrix Factorization-based Hierarchical Decomposition&lt;br&gt;Ghafoor Shah, Peter Koch, Constantinos B. Papadias</td>
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<td>Session C: Bio-Imaging and Pattern Recognition</td>
<td>Session D: Privacy, Security, and Personalized Diagnosis</td>
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<tr>
<td>Chair: Subrata Acharya</td>
<td>Chair: Ananda M. Mondal</td>
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<tr>
<td>Regular: 25 minutes each</td>
<td>Regular: 25 minutes each; Short: 20 minutes each</td>
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<tr>
<td>Michail Tsakalakis, Nikolaos G. Bourbakis</td>
<td>Suxin Guo, Sheng Zhong, Aidong Zhang</td>
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<td>25: Multi-object Tracking Based on Particle Probability Hypothesis Density Tracker in Microscopic video</td>
<td>84: NMF-based LncRNA-Disease Association Inference and Bi-clustering</td>
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<tr>
<td>Chunmei Shi, Lingling Zhao, Peijun Ma, Xiaohong Su, Junjie Wang, Chiping Zhang</td>
<td>Ashis Kumer Biswas, Baoju Zhang, Xiaoyong Wu, Jean X. Gao</td>
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<tr>
<td>90: A Local Adaptive Segmentation of Vascular Network From Abnormal Retinal Images</td>
<td>56: A New Approach to Multimedia Files Carving</td>
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<td>Zhangwei Jiang, Jing He, Yanchun Zhang, Shang Hu</td>
<td>Weidong Qiu</td>
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<td>44: The evaluation of hand bacteria as a human biometric identifier</td>
<td>6: Physiological and psychological changes during breathing control using illuminance changes with different cycles</td>
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<td>Amanda B. Holbert, Holly P. Whitelam, Letha J. Sooter, Jeremy M. Dawson, Lawrence A. Hornak</td>
<td>Kazuma Moriura, Hagiwara Hiroshi</td>
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<td>23: Toward Genomic Based Personalized Mathematical Models for Breast Cancer Tumor Growth</td>
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<td>Aydin Saribudak, Emir Ganic, Jianmin Zou, Stephen Gundry, M. Umit Uyar (short paper)</td>
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### Parallel Afternoon Sessions (3:45PM – 5:15PM)

<table>
<thead>
<tr>
<th>Location: Salon A&amp;B</th>
<th>Location: Parlor II&amp;III</th>
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<tr>
<td><strong>Session E: Bio-Engineering Systems</strong>&lt;br&gt;Chair: Jing He&lt;br&gt;<em>Regular: (25 minutes each)</em>&lt;br&gt;54: A Wearable Accelerometer System for Unobtrusive Monitoring of Parkinson Disease Motor Symptoms&lt;br&gt;Faisal M. Khan, Michael Barnathan, Michael Montgomery, Stanely Myers, Lucien Côté, Sheree Loftus&lt;br&gt;&lt;br&gt;74: A VHDL Based Controller Design for Non-contact Temperature and Breathing Sensors Suitable for Crib&lt;br&gt;Đat Tran, Kiet Duong, Ujjal K. Bhowmik&lt;br&gt;&lt;br&gt;62: Prototype of a wheelchair controlled by cervical movements&lt;br&gt;Angelo Zerbetto Neto, Alexandre Mesquita, Marilda Machado Spindola, Marcos Magnani&lt;br&gt;&lt;br&gt;76: Design of an e-Health Respiration and Body Posture Monitoring System and its Application for Rib Cage and Abdomen Synchrony Analysis&lt;br&gt;Atena Roshan Fekr, Katarzyna Radecka, Zeljko Zilic</td>
<td><strong>Session F: Feature Selection, Filtering, and Weighting</strong>&lt;br&gt;Chair: Taghi M. Khoshgoftaar&lt;br&gt;<em>Regular: (25 minutes each)</em>&lt;br&gt;46: Evaluation of Wrapper-based Feature Selection using Hard, Moderate, and Easy Bioinformatics Data&lt;br&gt;Ahmad Abu Shanab, Taghi M. Khoshgoftaar, Randall Wald&lt;br&gt;&lt;br&gt;28: Using Correlation-Based Feature Selection for a Diverse Collection of Bioinformatics Datasets&lt;br&gt;Randall Wald, Taghi M. Khoshgoftaar, Amri Napolitano&lt;br&gt;&lt;br&gt;17: New Feature Weighting Technique for Predicting Protein Subcellular Localization&lt;br&gt;Hisham Al-Mubaid, Duong B. Nguyen&lt;br&gt;&lt;br&gt;37: A Genetic algorithm for the selection of features used in the prediction of protein function&lt;br&gt;Larissa Fernandes Leijôto, Thiago Assis de Oliveira Rodrigues, Luis Enrique Záratey, Cristiane Neri Nobre&lt;br&gt;&lt;br&gt;8: On the Filtering of Photoplethysmography Signals&lt;br&gt;Adewale Emmanuel Awodeyi, Stephen R. Alty and Mohammad Ghavami</td>
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**Reception 6:00PM – 8:30PM (Boca Ballroom)**
Nov. 11 2014 (Tuesday)

Breakfast: 7:30 AM - 8:45 AM (Boca Ballroom Foyer)

Keynote Speech B (Chair: Xingquan Zhu)
9:00AM – 10:00 AM (Boca Ballroom)

Early Diagnostics and Therapy Optimization for Sepsis

Dr. Zoran Obradovic

L.H. Carnell Professor of Data Analytics
Director, Data Analytics and Biomedical Informatics Center,
Professor, Computer and Information Sciences Department,
Professor, Statistics Department, Fox School of Business (secondary appointment),
Temple University

Coffee Break: 10:00 AM – 10:20 AM

Parallel Morning Sessions (10:20AM - 12:00PM)

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<tr>
<th>Location: Salon A&amp;B</th>
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| **Session G: Gene Discovery and Identification**  
Chair: Lianfen Qian  
Regular: 25 minutes each |
| 58: miRNA based pathway analysis tool in nephroblastoma as a proof of principle for other cancer domains  
| 19: Essential Gene Identification for a Microarray Data of Yersinia Pestis  
Lianfen Qian, Wei Zhang and Zhongwei Li |
| 64: Disease-Gene Association Using a Genetic Algorithm  
Koosha Tahmasebipour, Sheridan Houghten |
| 26: A New, Dynamic-Representation-Based Gene Finding Method With An Analysis of False Positive Peaks (short paper)  
Sajid A. Marhon, Stefan C. Kremer |
| **Session H: Biomedical Documents and Multi-Source Mining**  
Chair: Jing He  
Regular: 25 minutes each; Short: 20 minutes each |
| 67: Analysis of the Suitability of Existing Medical Ontologies for Building a Scalable Semantic Interoperability Solution Supporting Multi-site Collaboration in Oncology  
| 10: An Improved Ratio-based (IRB) Batch Effects Removal Algorithm for Cancer Data in a Co-analysis Framework  
Shuchu Ham, Hong Qin, Dantong Yu |
| 86: Investigating Distributed Approaches to Efficiently Extract Textual Evidences for Biomedical Ontologies (short paper)  
Long Cheng, Yue Ma |
| 49: Causal Association Mining from Geriatric Literature (short paper)  
Anand Krishnan, Jon Sligh, Eric Tinsley, Natalie Crohn, Jean Bandos, Heather Bush, Jason DePasquale, Mathew Palakal |
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<tr>
<th>Lunch break: 12:15 PM – 1:45PM (Tended Courtyard &amp; Boca Ballroom)</th>
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### Parallel Afternoon Sessions (1:45PM – 3:15PM)

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<tr>
<th>Location: Salon A&amp;B</th>
<th>Location: Parlor II&amp;III</th>
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</table>
| **Session I: Gene and Protein Networks**  
Chair: Jean X. Gao  
*Regular: 25 minutes each; Short: 20 minutes each* | **Session J: Bio-Engineering and Decision Support Systems (I)**  
Chair: Nenad Filipovic  
*Regular: 25 minutes each; Short: 20 minutes each* |
| 59: Optimization and Analysis of Seriation Algorithm for Ordering Protein Networks  
Alena Simalatsar, Romain Bornet, Wenqi You, Yann Thoma, Giovanni De Micheli |
| 75: Integration of DNA Methylation, Copy Number Variation, and Gene Expression for Gene Regulatory Network Inference and Application to Psychiatric Disorders  
Dong-Chul Kim, Mingon Kang, Baoju Zhang, Xiaoyong Wu, Chunyu Liu, Jean Gao | 71: Computer Simulation of Hot Caloric Test Response in the Three Semicircular Canal  
Nenad Filipovic, Igor Saveljic, Zarko Milosevic |
| 5: Gene Networks Inference through Linear Grouping of Variables  
Carlos Fernando Montoya-Cubas, David Correa Martins-Jr, Carlos Silva Santos, Junior Barrera | 24: Proactive Real-time Solution for Asthma Management  
Subrata Acharya, Reza Sarraf |
| 80: STRING PPI Score to Characterize Protein Subnetwork Biomarkers for Human Diseases and Pathways  
Gabriela Henriques, Deborah Stacey |

**Coffee break 3:15PM – 3:45PM (Boca Ballroom Foyer)**

### Parallel Afternoon Sessions (3:45PM – 5:15PM)

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<tr>
<th>Location: Salon A&amp;B</th>
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| **Session K: Bio-Signal Processing (I)**  
Chair: Guozhu Dong  
*Regular: 25 minutes each* | **Session L: Bio-Engineering and Decision Support Systems (II)**  
Chair: Nenad Filipovic  
*Regular: 25 minutes each; Short: 20 minutes each* |
| 45: A New CPXR Based Logistic Regression Method and Clinical Prognostic Modeling Results Using the Method on Traumatic Brain Injury  
Vahid Taslimitehrani, Guozhu Dong | 34: Numerical Assessment of Turbulent flow Downstream of Stenosed Aortic Valve with flexible leaflets using Fluid-Solid Interactions Approach  
Armin Amindari, Huseyin Cagatay Yalcin |
53: Detection and Removal of Muscle artifacts from Scalp EEG Recordings in Patients with Epilepsy
Maria Anastasiadou, Avgis Hadjipapas, Manolis Christodoulakis, Eleftherios S. Papathanasiou, Savvas S. Papacostas, Georgios D. Mitsis

68: Fusion of EEG topographic features and fMRI using Canonical Partial Least Squares
Kostas Michalopoulos, Nikolaos Bourbakis

47: Selecting The Appropriate Data Sampling Approach for Imbalanced and High-Dimensional Bioinformatics Datasets
David J. Dittman, Taghi M. Khoshgoftaar, Amri Napolitano

42: Median Based Method for Baseline Wander Removal in Photoplethysmogram Signals (short paper)
Adewale Emmanuel Awodeyi, Stephen R. Alty and Mohammad Ghavami

1: Diagnosis of Diabetes using a Weight-Adjusted Voting Approach
Lin Li

70: On Sorting Under Special Transpositions (short paper)
Jici Huang, Swapnoneel Roy

39: An associative classification based approach for detecting SNP-SNP interactions in high dimensional genome (short paper)
Suneetha Uppu, Aneesh Krishna, Raj P.Gopalan

Banquet 6:30PM – 9:00PM (Boca Ballroom)

Dinner Speech (Chair: Taghi M. Khoshgoftaar)
7:30PM – 7:50PM

Title: The Larkin Health Sciences Campus as a model for Educating Local Youth for Medical Industry-related Jobs

Dr. Gary M. Levin
Vice President for Education and Chief Academic Officer for Larkin Community Hospital
Dean for the Larkin Health Sciences Institute College of Pharmacy

Award Session 8:00PM – 8:30PM (Chair: Xingquan Zhu)
Nov. 12 2014 (Wednesday)

**Breakfast:** 7:30 AM - 8:45 AM (Boca Ballroom Foyer)

**Parallel Morning Sessions (9:00AM - 10:30 AM)**

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<tr>
<td><strong>Conference Regular Session</strong>&lt;br&gt;Session M: Bio-Signal Processing (II):&lt;br&gt;Chair: Nikolaos Bourbakis&lt;br&gt;Regular: 25 minutes each; Short: 20 minutes each&lt;br&gt;33: Effect of blood rheological models on patient specific cardiovascular system simulations&lt;br&gt;Anastasios Skiadopoulos, Panagiotis Neofytou, Christos Housiadas&lt;br&gt;52: Analysis of Cognitive Load - Importance of EEG Channel Selection for Low Resolution Commercial EEG Devices&lt;br&gt;Aniruddha Sinha, Debatri Chatterjee, Diptesh Das, Arijit Sinharay&lt;br&gt;60: Fuzzy Estimation of Liver Stiffness in Modelling Liver Deformation (short paper)&lt;br&gt;TAN SING YEE, SARINDER K. DHILLON, AMANDEEP S. SIDHU&lt;br&gt;55: Effect of Multi-K Contig Merging in de novo DNA Assembly (short paper)&lt;br&gt;Mohammad Goodarzi, Sheridan Houghten, Ping Liang</td>
<td><strong>Panel Discussion Session</strong>&lt;br&gt;Chair: Van Hipp&lt;br&gt;<strong>Securing Medical Data in the Cloud</strong>&lt;br&gt;Dr. Doyeol (David) Ahn&lt;br&gt;WB Distinguished Professor of Quantum Electronics, University of Seoul&lt;br&gt;Koray Karabina&lt;br&gt;Florida Atlantic University&lt;br&gt;Sean Kwak&lt;br&gt;SK Telecom</td>
<td><strong>Workshop Session</strong>&lt;br&gt;<strong>Health Informatics Workshop</strong>&lt;br&gt;Chair: Ankur Agrawal&lt;br&gt;Regular: (20 minutes each)&lt;br&gt;301: Predictive Modeling for Wellness and Chronic Conditions&lt;br&gt;Ravi S Behara, Ankur Agarwal, Pرانitha Pulumati, Ritesh Jain, Vinaya Rao&lt;br&gt;302: Domain Independent Natural Language Processing; A Case Study for Hospital Readmission with COPD&lt;br&gt;Ankur Agarwal, Ravi S Behara, Sirish Mulpura, Vivek Tyagi&lt;br&gt;303: Predictive Modeling for Organ Transplantation Outcomes&lt;br&gt;Vinaya Rao, Ravi S Behara, Ankur Agarwal&lt;br&gt;304: MRI Reliability in Correlating Clinical Findings of Trigeminal Neuralgia&lt;br&gt;Christopher J. de la Houssaye, Sirish Mulpura, Steven J. DePrima</td>
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<td>Workshop Session</td>
<td>Location: Salon A&amp;B</td>
<td>Location: Salon C</td>
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<td><strong>Workshop Session</strong></td>
<td><strong>Health Informatics Workshop (continued)</strong></td>
<td><strong>Big Data and Data Analytics Workshop</strong></td>
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<tr>
<td>Chair: Taghi M. Khoshgoftaar</td>
<td>Invited Talk: Improved Outcomes through continuous vital monitoring Tracy Ingram BioscanR</td>
<td>Chair: Koray Karabina Regular: (20 minutes each)</td>
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**Lunch break: 12:00 PM – 1:30PM (Tended Courtyard & Boca Ballroom)**

**Conference Close**