BSEC 2013: Collaborative Biomedical Innovations

May 21-23, 2013

Oak Ridge, TN

Conference Agenda

Tuesday, May 21, 2013	
1:00 pm to 2:00 pm	Registration
2:00 pm to 2:30 pm	Welcome and Opening Remarks
2:30 pm to 3:30 pm	Keynote Speaker Panel *Collaborative global networks for addressing scientific challenges with integrating modeling, simulation, and experiments*
3:30 pm to 4:00 pm	Panel Discussion

Wednesday, May 22, 2013	
7:30 am to 8:15 am	Registration and Continental Breakfast
8:15 am to 8:30 am	Welcome and Day Agenda Overview
8:30 am to 9:15 am	**Keynote Address: *TITLE*** Samir K. Brahmachari, PhD Director General of the Council of Scientific and Industrial Research (CSIR) Secretary to the Govt. of India, DSIR
	SESSION 1: Modeling and Simulation at Multiple Physiological Scales
9:15 am to 9:45 am	Plenary Talk: *Mapping the Brain with Electron Microscopy and Machine Learning* Viren Jain, PhD Howard Hughes Medical Institute (HHMI) Fellow and Laboratory Head, Janelia Farm Research Campus
9:45 am to 10:05 am	Invited Talk: *Multiscale Modeling of RNA 3D Structures* Pengyu Ren, PhD The University of Texas at Austin Associate Professor of Biomedical Engineering
10:05 am to 10:25 am	Invited Talk: *Modeling and Simulation of Fast Neutron Imaging Systems for Medical Diagnostics* Anuj Kapadia, PhD Duke University Medical Center Assistant Professor of Radiology

10:25 am to 10:45 am	Break
10:45 am to 11:00 am	*Developing In Vitro Models of the Sub-Retinal Microenvironment* Elizabeth Vardis Oak Ridge National Laboratory
11:00 am to 11:15 am	*Numerical Study of Electrical Stimulation for Neuronal Cell Growth on Silica Aerogel Substrate* Sakib Soyeb University of Memphis
11:15 am to 11:30 am	*A Biomechanical Model of Pacinian-Corpuscle & Skin* Abijit Biswas Indian Institute of Technology Madras
11:30 am to 11:45 am	*Computational Modeling Of Flow-Induced Vocal Fold Vibration* Fangbao Tian Vanderbilt University
11:45 am to 12:00 pm	Guest Talk: *Multi-scale Modeling of Self-Assembled Nanomaterials* Takeshi Yamazaki Qatar Biomedical Research Institute
12:00 am to 12:15 pm	Guest Talk: *Application of Multi-Scale Modeling for the Design of Functional Nanomaterials* Hicham Fenniri, Qatar Biomedical Research Institute
12:15 am to 12:30 pm	Break
12:30 am to 1:30 pm	Working Lunch: ADD TITLE / PRESENTER
	SESSION 2: Tools and Infrastructures for Large-Scale Biomedical Data
1:30 pm to 2:00 pm	Plenary Talk: *Preparing for Precision Medicine -Computational Challenges and Opportunities* Chinnappa Kodira, PhD General Electric Global Research Bioinformatics Strategy Leader & Manager of Computational Biology & Biostatistics
2:00 pm to 2:20 pm	Invited Talk: *Mathematical Model of The Effect of Inter-Cellular Cooperative Interactions In Cancer During Drug Therapy* May Wang, PhD Georgia Institute of Technology Associate Professor, Wallace H. Coulter Dept. of Biomedical Engineering Georgia Cancer Coalition Distinguished Cancer Scholar

	Director of Biocomputing and Bioinformatics Core in Emory-Georgia Tech Center of Cancer Nanotechnology Excellence
2:20 pm to 2:40 pm	Invited Talk: *Quantitative in vivo Imaging to Initialize and Constrain a Biophysical Model of Tumor Growth*
	Thomas Yankeelov, PhD Vanderbilt University Institute of Imaging Science (VUIIS) Director of Cancer Imaging Research
2:40 pm to 3:00 pm	Invited Talk: *Integrating Experiments, Simulations And Statistical Inference To Elucidate The Conformational Landscapes Of Intrinsically Disordered Proteins*
	Arvind Ramanathan, PhD Oak Ridge National Laboratory
3:00 pm to 3:15 pm	Break (with refreshments)
3:15 pm to 3:30 pm	*A Bioinformatics Pipeline For Sequence To Structure: A Case Study With A CML Patient Undergoing Treatment With Imatinib*
	Anita Chacko National Centre for Biological Sciences, India
3:30 pm to 3:45 pm	*Automated Tracing and Segmentation Tool for Migrating Neurons in 4D Confocal Imagery*
	Mahmut Karakaya Oak Ridge National Laboratory
3:45 pm to 4:00 pm	*The Application of Micro-segmentation Algorithms to the Healthcare Market:A Case Study*
	Rangan Sukumar Oak Ridge National Laboratory
4:00 pm to 4:30 pm	Break and Poster Set up
4:30 pm to 6:30 pm	Poster Session and Reception

Thursday, May 23, 2013

7:30 am to 8:15 am	Registration and Continental Breakfast
8:15 am to 8:30 am	Welcome and Day Agenda Overview
	SESSION 3: Applications in Clinical and Translational Medicine
8:30 am to 9:00 am	Plenary Speaker: *A Virtual Framework for Semi-Autonomous Robotic Surgery using Real-Time Spatial Mapping*
	Grant Schaffner, PhD University of Cincinnati Assistant Professor of Aerospace Engineering
9:00 am to 9:20 am	Invited Talk: *MRI-Based Diagnostic System for Early Detection of Prostate*

	Cancer
	Adel Elmaghraby, PhD University of Louisville Professor and Chairman of Computer Engineering and Computer Science
9:20 am to 9:40 am	Invited Talk: *Micro and Nano-Fluidics Enabled Frontiers In Bioenergy And Biomedical Engineering*
	Aloke Kumar, PhD University of Alberta Assistant Professor of Mechanical Engineering
9:40 am to 10:00 am	Invited Talk: *Novel Cardiac Micro-Impedance Measurement Strategies*
	Andrew Pollard, PhD University of Alabama at Birmingham Professor of Biomedical Engineering
10:00 am to 10:15 am	Break (with refreshments)
10:15 am to 10:30 am	*Prediction of ICU In-Hospital Mortality Using a Deep Boltzmann Machine and Dropout Neural Net*
	Daniel Ryan University of Tennessee at Knoxville
10:30 am to 10:45 am	*Energy-Based Architecture for Classification of Publication Figures*
	Paolo Barbano Yale University
10:45 am to 11:00 am	*A Cost-Effective, Case-Control Study on the Association Between Breast Cancer Risk and Pregnancy through Web Mining*
	Hong-Jun Yoon Oak Ridge National Laboratory
11:00 am to 11:15 am	Guest Talk: *A Novel Oligonucleotide that Improves Liver Function and Simultaneously Treats Liver Cancer*
	Nagy Habib Qatar Biomedical Research Institute
11:15 am to 11:45 am	Next Steps and Closing Remarks
	Georgia Tourassi, PhD
11:45 am	Adjournment
12:00 pm to 3:30 pm	ORNL Tour (optional)