

		Wednesday, October 8, 14:00 – 16:00	
Plenary Session			Olympia 2
<i>Chair</i>		<i>K. S. Nikita (National Technical University of Athens/GR)</i>	
PL. 1	14:00-14:40	Science and Technology: Genes, Brain, Stress and Evolution <i>G. Chrousos; Athens University Medical School/GR</i>	
PL. 2	14:40-15:20	Biomedical Engineering for Global Healthcare <i>M. Akay; Arizona State University/USA</i>	
PL. 3	15:20-16:00	The European Cancer Informatics Landscape: Challenges for the Biomedical Informatics Community <i>M. Tsiknakis; Institute of Computer Science FORTH/GR</i>	
		Wednesday, October 8, 16:20 – 17:50	
Session BI-8.1			Olympia 1
		Sequence Search and Alignment	
<i>Chairs</i>		<i>R. Henson (The Mathworks Inc/USA), A. Stafylopatis (National Technical University of Athens/GR)</i>	
BI-8.1.1	16:20-16:35	A Novel Method for Protein 3D-Structure Similarity Measure Based on N-Gram Modeling <i>J. Razmara¹, S. B. Deris²; ¹Tarbiat Moallem University of Azarbaijan/IR, ²Universiti Teknologi Malaysia/MY</i>	
BI-8.1.2	16:35-16:50	Sequence Clustering with the Self-Organizing Hidden Markov Model Map <i>C. Ferles, A. Stafylopatis; National Technical University of Athens/GR</i>	
BI-8.1.3	16:50-17:05	Design and Implementation of the Smith-Waterman Algorithm on the CUDA-compatible GPU <i>Y. Munekawa, F. Ino, K. Hagihara; Osaka University/JP</i>	
BI-8.1.4	17:05-17:20	High Performance FPGA-based Core for BLAST Sequence Alignment with the Two-Hit Method <i>S. Kasap, K. Benkrid, Y. Liu; University of Edinburgh/UK</i>	
BI-8.1.5	17:20-17:35	Optimizing Performance, Cost, and Sensitivity in Pairwise Sequence Search on a Cluster of PlayStations <i>A. M. Aji, W. Feng; Virginia Tech/USA</i>	
BI-8.1.6	17:35-17:50	An Improved Non-Comparative Classification Method for Human microRNA Gene Prediction <i>R. Batuwita, V. Palade; University of Oxford/UK</i>	
		Wednesday, October 8, 16:20 – 17:50	
Session BI-9.1			Templar's
		Systems Biology	
<i>Chairs</i>		<i>I. Rigoutsos (IBM Thomas J. Watson Research Centre/USA), L. Alexopoulos (National Technical University of Athens/GR)</i>	
BI-9.1.1	16:20-16:35	Adaptive Aggregation Method for the Chemical Master Equation <i>J. Zhang, L. Watson, Y. Cao; Virginia Polytechnic Institute and State University/USA</i>	
BI-9.1.2	16:35-16:50	Parameter Identification for a DNA Replication Model <i>K. Koutroumpas¹, Z. Lygerou², J. Lygeros¹; ¹ETH Zurich/CH, ²University of Patras/GR</i>	
BI-9.1.3	16:50-17:05	A Framework for the Integrated Analysis of Metabolic and Regulatory Networks <i>R. Mendes, A. Lourenço, S. Carneiro, E. C. Ferreira, I. Rocha, M. Rocha; University of Minho/PT</i>	
BI-9.1.4	17:05-17:20	Stability and Oscillation of Genetic Regulatory Networks with Time Delays <i>F. X. Wu; University of Saskatchewan/CA</i>	
BI-9.1.5	17:20-17:35	Structure Learning for Biomolecular Pathways Containing Cycles <i>S. Itani¹, K. Sachs², G. Nolen², N. Dahleh¹; ¹MIT/USA, ²Stanford University/USA</i>	
BI-9.1.6	17:35-17:50	Building in-silico Pathway SBML Models from Heterogeneous Sources <i>I. Kanaris¹, K. Moutselos¹, A. Chatziioannou², I. Maglogiannis¹, F. Kolisis²; ¹University of Aegean/GR, ²National Hellenic Research Foundation/GR</i>	

		Wednesday, October 8, 16:20 – 17:35	
Session BE-2.1			Abbey
		Biological Systems and Models	
<i>Chairs</i>		<i>M. Bloom (New York University/USA), C. Provatidis (National Technical University of Athens/GR)</i>	
BE-2.1.1	16:20-16:35	Translating Multiscale Cancer Models into Clinical Trials: Simulating Breast Cancer Tumor Dynamics within the Framework of the “Trial of Principle” Clinical Trial and the ACGT project. <i>E. Kolokotroni¹, G. Stamatakos¹, D. Dionysiou¹, E. Georgiadi¹, C. Desmedt², N. Graf³; ¹National Technical University of Athens/GR, ²Institut Jules Bordet/BE, ³University Hospital of Saarland/DE</i>	
BE-2.1.2	16:35-16:50	Multilevel Cancer Modeling in the Clinical Environment: Simulating the Behavior of Wilms Tumor in the Context of the SIOF 2001/GPOH Clinical Trial and the ACGT Project <i>E. Georgiadi¹, G. Stamatakos¹, N. Graf², E. Kolokotroni¹, D. Dionysiou¹, A. Hoppe², N. Uzunoglu¹; ¹National Technical University of Athens/GR, ²University Hospital of the Saarland/DE</i>	
BE-2.1.3	16:50-17:05	Robust Parameter Identification for Biological Circuit Calibration <i>E. Sciacca, G. Nicosia; University of Catania/IT</i>	
BE-2.1.4	17:05-17:20	Towards an Inclusive Computational Model of Visual Cortex <i>M. Gheiratmand¹, H. Soltanian-Zadeh^{2,3}, H. Khaloozadeh¹; ¹K. N. Toosi University of Technology/IR, ²University of Tehran/IR, ³Henry Ford Health System/USA</i>	
BE-2.1.5	17:20-17:35	Modeling and Simulation of Electrical Impedance Tomography (EIT) on Ventilated Patients with ARDS Lungs <i>M. Denai¹, M. Mahfouf¹, G. H. Mills²; ¹University of Sheffield/UK, ²Royal Hallamshire Hospital/UK</i>	

		Wednesday, October 8, 17:50 – 19:05	
Session BE-5.1			Olympia 1
		Biomedical Image Processing & Analysis	
<i>Chairs</i>		<i>E. Kostaridou (University of Patras/GR), S. Golemati (University of Athens/GR)</i>	
BE-5.1.1	17:50-18:05	Using Agents for Feature Extraction: Content Based Image Retrieval for Medical Applications <i>A. D Theodosi, G. A. Tsihrintzis; University of Piraeus/GR</i>	
BE-5.1.2	18:05-18:20	On the Use of Block Matching for the Estimation of Arterial Wall Motion <i>S. Golemati, J. Stoitsis, K. S. Nikita; National Technical University of Athens/GR</i>	
BE-5.1.3	18:20-18:35	Mass Detectability in Dedicated Breast CT: A Simulation Study with the Application of Volume Noise Removal <i>J. Xia, J. Lo; Duke University/USA</i>	
BE-5.1.4	18:35-18:50	Susceptibility of Texture Measures to Noise: An Application to Lung Tumor CT Images <i>O. A. Kadi, D. Watson; University of Sussex/UK</i>	
BE-5.1.5	18:50-19:05	Using Spiral Intensity Profile to Quantify Head and Neck Cancer <i>K. Kong¹, Y. Sharma¹, S. H. Raza¹, Z. Chen², S. Muller², M. Wang¹; ¹Georgia Institute of Technology/USA, ²Emory University/USA</i>	

		Wednesday, October 8, 17:50 – 19:05	
Session BI-9.2			Templar's
		Systems Biology	
<i>Chairs</i>		<i>P. D. Cristea (University "Politehnica" of Bucharest/RO), J. Lygeros (ETH Zurich/CH)</i>	
BI-9.2.1	17:50-18:05	A Hybrid Computational Model for Phagocyte Transmigration <i>J. Xue, J. Gao, L. Tang; University of Texas at Arlington/USA</i>	
BI-9.2.2	18:05-18:20	Modeling Pro-death Signaling Pathways in Cancer Hepatocytes Using Multi-combinatorial Treatments of Inhibitors and Stimuli <i>L. Alexopoulos¹, D. Lauffenburger², P. Sorger³; ¹National Technical University of Athens/GR, ²MIT/USA, ³Harvard Medical School/USA</i>	
BI-9.2.3	18:20-18:35	Evaluating Evolutionary Multiobjective Algorithms for the <i>in silico</i> Optimization of Mutant Strains	

- BI-9.2.4 18:35-18:50 *P. Maia, I. Rocha, E.C. Ferreira, M. Rocha; University of Minho/PT*
Systems Analysis of Bone Mechanotransduction at Cellular Level
K. Mynampati¹, P. L. Vee Sin²; ¹National University of Singapore/SG, ²University of Melbourne/AU
- BI-9.2.5 18:50-19:05 The Benefit of Cooperation: Identifying Growth-efficient Interacting Strains of Escherichia Coli Using Metabolic Flux Balance Models
E. Tzamali^{1,2}, M. Reczko³; ¹University of Crete/GR, ²Foundation for Research and Technology Hellas/GR, ³Synaptic Ltd/GR

Wednesday, October 8, 17:50 – 19:20

Session BE-7.1

Abbey

Neuro-Engineering

Chairs

P. Ktonas (University of Houston/USA), C. Siettos (National Technical University of Athens/GR)

- BE-7.1.1 17:50-18:05 Automatic Intra-Operative Localization of STN using the Beta Band Frequencies of Microelectrode Recordings
K. P. Michmizos¹, G. L. Tagaris², D. E. Sakas³, K. S. Nikita¹; ¹National Technical University of Athens/GR, ²"G. Gennimatas" General Hospital of Athens/GR, ³University of Athens, "Evangelismos" Hospital/GR
- BE-7.1.2 18:05-18:20 Slow and Fast EEG Sleep Spindle Component Extraction Using Independent Component Analysis
E. Ventouras¹, P. Ktonas², H. Tsekou², T. Paparrigopoulos², I. Kalatzis¹, C. Soldatos²; ¹Technological Educational Institute of Athens/GR, ²University of Athens/GR,
- BE-7.1.3 18:20-18:35 Comparison of Fractal Dimension Estimation Algorithms for Epileptic Seizure Onset Detection
G. E. Polychronaki¹, P. Ktonas², S. Gatzonis⁴, P. A. Asvestas³, E. Spanou¹, A. Siatouni⁴, H. Tsekou⁴, D. Sakas⁴, K. S. Nikita¹; ¹National Technical University of Athens/GR, ²"Prof. Petros Kokkalis" Greek Center for Neurosurgical Research/GR, ³Technological Educational Institute of Athens/GR, ⁴University of Athens, "Evangelismos" Hospital/GR
- BE-7.1.4 18:35-18:50 Towards Emotion Aware Computing: a Study of Arousal Modulation with Multichannel Event Related Potentials, Delta Oscillatory Activity and Skin Conductivity Responses
C. Frantzidis¹, C. Lithari¹, A. Vivas², C. Papadelis³, C. Pappas¹, P. Bamidis¹; ¹Aristotle University of Thessaloniki/GR, ²City Liberal Studies/GR, ³RIKEN/JP
- BE-7.1.5 18:50-19:05 A Neural Network Model of Peri-Hand Space Representation and its Plastic Properties Related to Tool Use
E. Magosso, M. Zavaglia, A. Serino, G. di Pellegrino, M. Ursino; University of Bologna/IT
- BE-7.1.6 19:05-19:20 Fitting Local Field Potentials Generating Model of the Basal Ganglia to Actual Recorded Signals
G. Tsirogiannis¹, G. Tagaris², D. Sakas³, K. Nikita¹; ¹National Technical University of Athens/GR, ²"G. Gennimatas" General Hospital of Athens/GR, ³University of Athens, "Evangelismos" Hospital/GR

Thursday, October 9, 08:00 – 09:20

Plenary Session

Olympia 2

Chair

D. I. Fotiadis (University of Ioannina/GR)

- PL. 4 08:00-08:40 Model-Based Strategies for Biomedical Image Analysis
J. S. Duncan; Yale University/USA
- PL. 5 08:40-09:20 Recent Research Activities in Europe: Supporting the Evolution of Healthcare
L. Gatzoulis; European Commission

Thursday, October 9, 09:20 – 10:50

Session BI-3.1

Olympia 1

Functional Genomics, Proteomics

Chairs

F. Kolisis (National Hellenic Research Foundation/GR), J. Gao (University of Texas at Arlington/USA)

- BI-3.1.1 09:20-09:35 VIP: Visualization of Integrated Proteomics Data
E. Giannopoulou¹, G. Lepouras¹, E. Manolakos²; ¹University of Peloponnese/GR, ²University of Athens/GR
- BI-3.1.2 09:35-09:50 Proteomic Based Identification of Cancer Biomarkers: The LOCCANDIA Integrated Platform
M. Kalaitzakis¹, V. Kritsotakis¹, P. Grangeat², C. Paulus², L. Gerfault², M. Perez³, C. Reina³, G. Potamias¹, M. Tsiknakis¹, D. Kafetzopoulos¹, P. Binz⁴; ¹FORTH/GR, ²CEA-LETI/FR, ³ATOS Origin/ES, ⁴Geneva Bioinformatics (GeneBio) SA/CH
- BI-3.1.3 09:50-10:05 Evaluation of Two-Dimensional Gel Electrophoresis Maps by Local Tangent Space Alignment: an Application to Neuroproteomics
S. Mazzara¹, A. Conti², S. Olivieri², S. Iannaccone², M. Alessio², S. Cerutti¹, L. Pattini¹; ¹Politecnico di Milano/IT, ²San Raffaele Scientific Institute/IT
- BI-3.1.4 10:05-10:20 Inserts in Prokaryote Genomes
P. D. Cristea¹, R. A. Tuduce¹, J. Cornelis²; ¹University "Politehnica" of Bucharest/RO, ²Vrije Universiteit Brussel/BE
- BI-3.1.5 10:20-10:35 A Binary Format for Genetic Data Designed for Large Whole Genome Studies that Enables both Marker and Strand Based Analyses
A. Antoniadou, L. Loizou, A. Aristodimou, C. Pattichis; University of Cyprus/CY
- BI-3.1.6 10:35-10:50 Model-based Prediction of Cis-acting RNA Elements Regulating Tissue-specific Alternative Splicing
X. Wang¹, K. Wang², G. Wang¹, J. Sanford¹, Y. Liu¹; ¹Indiana University/USA, ²Harbin Engineering University/CN

Thursday, October 9, 09:20 – 10:50

Session BE-4.1

Templar's

Biomedical Data Engineering

Chairs

P. Sebastiani (Boston University, USA), I. Maglogiannis (University of Central Greece/GR)

- BE-4.1.1 09:20-09:35 Flexible Data Integration and Ontology-based Data Access to Medical Records
L. Zamboulis, A. Poulouvassilis, G. Roussos; Birkbeck College, University of London/UK
- BE-4.1.2 09:35-09:50 Novel Metrics of Functional Network Structure and Their Application to the Detection and Characterisation of Alzheimer's Disease
A. Anastasiou, E. Ifeachor; University of Plymouth/UK
- BE-4.1.3 09:50-10:05 HRV Complexity as a Diagnostic Tool for Late Onset Sepsis in Sick Premature Infants
Y. Wang^{1,4}, L. Senhadji^{1,4}, G. Carrault^{1,4}, H. Shu^{2,4}, A. Beuchee^{3,4}; ¹Université de Rennes 1/FR, ²Southeast University/CN, ³Centres Hospitaliers Universitaires/FR, ⁴Centre de Recherche en Information Biomédicale sino-français/FR
- BE-4.1.4 10:05-10:20 Structuring the e-SCP-ECG⁺ Protocol for Multi Vital-sign Handling
G. Mandellos, M. Koukias, D. Lymberopoulos; University of Patras/GR
- BE-4.1.5 10:20-10:35 Point of Care Monitoring and Diagnostics for Autoimmune Diseases
F. G. Kalatzis¹, T. P. Exarchos¹, N. Giannakeas¹, S. Markoula¹, E. Hatzis², P. Rizos¹, I. Georgiou¹, D. I. Fotiadis¹; University of Ioannina/GR, University Hospital of Ioannina/GR
- BE-4.1.6 10:35-10:50 Monitoring of Patients Suffering from Special Phobias Exploiting Context and Profile Information
T. Panagiotakopoulos¹, D. Lymberopoulos¹, G. Manolios²; ¹University of Patras/GR, ²Mental Health Center of Patras/GR

Thursday, October 9, 09:20 – 10:50

Session BE-2.2

Abbey

Biological Systems and Models

Chairs

S. Tsangaris (National Technical University of Athens/GR), N. Maglaveras (Aristotle University of Thessaloniki/GR)

- BE-2.2.1 09:20-09:35 Changes in Bone Components of Newborn Rats after Maternal Treatment with Cytarabine
Z. Drzazga¹, K. Michalik¹, M. Kaszuba², H. Trzeciak²; ¹University of Silesia/PL, ²Institute of Stomatology/PL, ³Medical University of Silesia/PL
- BE-2.2.2 09:35-09:50 Laser Induced Autofluorescence of Bones and Teeth in Newborn Rats after Maternal Administration of Indinavir
Z. Drzazga¹, A. Blasza¹, M. Kaszuba², B. Nowinska³, K. Michalik¹; ¹University of Silesia/PL, ²Institute of Stomatology/PL, ³Medical University of Silesia/PL
- BE-2.2.3 09:50-10:05 The Influence of Different Bone Remodeling Equations on a 2-D Vertebra Model in the Final Bone Density Distribution
C. Vossou, G. Savva, C. Provatidis; National Technical University of Athens/GR
- BE-2.2.4 10:05-10:20 The Influence of Infection Control Policies: A Systematic Study of the Dynamics of an Individual-based Epidemic Model with Isolation
A. Reppas, A. Tsoumanis, C. Siettos; National Technical University of Athens/GR
- BE-2.2.5 10:20-10:35 Dead-time Compensation in Intravenous Anesthesia Control
J. Mendez¹, S. Torres¹, J. Rebozo², H. Rebozo¹; ¹University of La Laguna/ES, ²Hospital Universitario de Canarias/ES
- BE-2.2.6 10:35-10:50 Numerical Simulation of Coronary Blood Flow in Idealized Composite Arterial Coronary Grafts
A. Politis¹, G. Stavropoulos², N. Vlachos³, N. Markatos¹; ¹National Technical University of Athens/GR, ²Hippokraton Hospital/GR, ³University of Thessaly/GR

Thursday, October 9, 10:50 – 11:30

Poster Session

Olympia 2

BIOENGINEERING

- BE-P.1 10:50-11:30 A Parallel Robot for Ankle Rehabilitation-Evaluation and its Design Specifications
C. Syrseloudis, I. Emiris; National Kapodistrian University of Athens/GR
- BE-P.2 10:50-11:30 Continuous Recording of the Oscillometric Mean Arterial Pressure by the Differential Servo System with Two Photoplethysmographic Sensors
R. Raamat, K. Jagomagi, J. Talts; University of Tartu/EE
- BE-P.3 10:50-11:30 Oxygen Consumption by Vascular Wall in Skeletal Muscle Arterioles under Physiological Conditions
M. Shibata¹, T. Yamakoshi², K. I. Yamakoshi²; ¹Shibaura Institute of Technology/JP, ²Kanazawa University/JP
- BE-P.4 10:50-11:30 Development of Urine Glucose Level Monitor for Home Healthcare Using Near Infrared Spectroscopy
S. Tanaka, M. Ogawa, T. Gu, K. i. Yamakoshi; Kanazawa University/JP
- BE-P.5 10:50-11:30 Fractal Analysis of Medical Images in the Irregular Regions of Interest
E. Oczeretko¹, M. Borowska¹, A. Kitlas¹, A. Borusiewicz², M. S. Siemieniuk³; ¹University of Bialystok/PL, ²Academy of Agrobusiness/PL, ³Medical University of Bialystok/PL
- BE-P.6 10:50-11:30 Characterization of Chromatin Texture by Contour Complexity for Cancer Cell Classification
T. Kiyuna¹, A. Saito¹, E. Kerr², W. Bickmore²; ¹NEC Corporation/JP, ²Western General Hospital/UK
- BE-P.7 10:50-11:30 Effects of Digital Dewaxing Methods on K-means-clusterized IR Images Collected on Formalin-fixed Paraffin-embedded Samples of Skin Carcinoma
D. Sebiskveradze, C. Gobinet, E. Ly, O. Piot, V. Vrabie, M. Manfait, P. Jeannesson, M. Herbin; Universite de Reims/FR
- BE-P.8 10:50-11:30 Size-adapted Segmentation of Individual Mammographic Microcalcifications
N. Arikidis¹, A. Karahaliou¹, S. Skiadopoulou¹, P. Korfiatis¹, E. Likaki², G. Panayiotakis¹, L. Costaridou¹; ¹University of Patras/GR, ²University Hospital of Patras/GR
- BE-P.9 10:50-11:30 Retrieval and Ranking of Biomedical Images Using Boosted Haar Features
C. Reddy, F. Bhuyan; Wayne State University/USA
- BE-P.10 10:50-11:30 Multimodality Image Registration using Ordinary Procrustes Analysis and Entropy of Bivariate Normal Kernel Density
W. H. Cho¹, S. W. Kim¹, M. E. Lee¹, S. H. Kim², S. Y. Park², C. Jeong³; ¹Chonnam National University/KR, ²Mokpo National University/KR, ³Honam University/KR
- BE-P.11 10:50-11:30 Wavelet Entropy Differentiations of Event Related Potentials in Dyslexia

		<u>G. A. Giannakakis</u> ¹ , <u>N. N. Tsiaparas</u> ¹ , <u>M. F. S. Xenikou</u> ¹ , <u>C. Papageorgiou</u> ² , <u>K. S. Nikita</u> ¹ ; ¹ National Technical University of Athens/GR, ² University of Athens, Eginition Hospital/GR
BE-P.12	10:50-11:30	Stability Analysis of Epileptic EEG Signals
BE-P.13	10:50-11:30	<u>G. Hoceped</u> , <u>A. Kacha</u> , <u>F. Grenez</u> , <u>A. Nonclercq</u> ; <u>University of Brussels/BE</u>
BE-P.14	10:50-11:30	Control of Medical Robotics and Neurobotic Prosthetics by Non-invasive Brain-robot Interfaces via EEG and RFID Technology <u>E. Antoniadou</u> ; <u>Univeristy Of Central Greece/GR</u>
BE-P.15	10:50-11:30	Graph Theory Based Algorithm for Magnetic Resonance Brain Images Segmentation <u>J. Wang</u> , <u>D. Liu</u> , <u>L. Dou</u> , <u>B. Zhang</u> , <u>J. Kong</u> , <u>Y. Lu</u> ; <u>Northeast Normal University/CN</u>
BE-P.16	10:50-11:30	Monte Carlo Modeling of Corneal and Retinal Optical Coherence Tomography Imaging <u>A. Gerakis</u> ¹ , <u>M. Kirillin</u> ² , <u>E. Sergeeva</u> ² , <u>M. Makropoulou</u> ¹ , <u>A. Serafetinides</u> ¹ ; ¹ National Technical University of Athens/GR, ² Russian Academy of Science/RU
BE-P.17	10:50-11:30	Investigating Mesh Parameters to Achieve Clinically Applicable Finite Element Analysis of Vertebrae <u>C. Vossou</u> , <u>C. Provatidis</u> ; <u>National Technical University of Athens/GR</u>
BE-P.18	10:50-11:30	Image Analysis and CADx System for Mucosal Lesions <u>A. Chodorowski</u> ¹ , <u>C. R. Choudhury</u> ² , <u>T. Gustavsson</u> ¹ ; ¹ Chalmers University of Technology/SE, ² AB Shetty Memorial Institute of Dental Sciences/IN
BE-P.19	10:50-11:30	Gait Analysis and Automatic Gait Event Identification Using Accelerometers <u>G. Zdragkas</u> , <u>J. Avaritsiotis</u> ; <u>National Technical University of Athens/GR</u>
BE-P.20	10:50-11:30	Versatile Approximation of the Lung Field Boundaries in Chest Radiographs in the Presence of Bacterial Pulmonary Infections <u>D. Iakovidis</u> ; <u>Technological Educational Institute of Lamia/GR</u>
BE-P.21	10:50-11:30	Assessment of Osteoarthritis Severity by Wavelet Analysis of the Hip Joint Space Radial Distance Signature <u>I. Boniatis</u> , <u>E. Panagiotopoulos</u> , <u>D. Lymberopoulos</u> , <u>G. Panayiotakis</u> ; <u>University of Patras/GR</u>
BE-P.22	10:50-11:30	Chromosome Region Recognition Based on Local Band Patterns <u>T. Abe</u> , <u>C. Hamada</u> , <u>T. Kinoshita</u> ; <u>Tohoku University/JP</u>
BE-P.23	10:50-11:30	A Robust Pose Matching Algorithm for Covered Body Analysis for Sleep Apnea <u>C. W. Wang</u> , <u>A. Hunter</u> ; <u>University of Lincoln/UK</u>
BE-5.4.6*	10:50-11:30	Ontology-Inferred Phylogeny Reconstruction for Analyzing the Evolutionary Relationships between Species: Ontological Inference versus Cladistics <u>A. Shaban-Nejad</u> , <u>V. Haarslev</u> ; <u>Concordia University/CA</u>
		A Simple Sequential Pose Recognition Model for Sleep Apnea <u>C.W. Wang</u> , <u>A. Hunter</u> ; <u>University of Lincoln/UK</u>

Thursday, October 9, 11:30 – 13:00

Session BE-5.2

Olympia 1

Biomedical Image Processing & Analysis

Chairs

N. Paragios (Ecole Centrale de Paris/FR), G. Panayiotakis (University of Patras/GR)

BE-5.2.1	11:30-11:45	Segmentation of Sublingual Veins from Near Infrared Sublingual Images <u>Z. Yan</u> , <u>K. Wang</u> , <u>N. Li</u> ; <u>Harbin Institute of Technology/CN</u>
BE-5.2.2	11:45-12:00	Joining Retinal Vessel Segments <u>B. A. Diri</u> ¹ , <u>A. Hunter</u> ¹ , <u>D. Steel</u> ² , <u>M. Habib</u> ² ; ¹ The University of Lincoln/UK, ² Sunderland Eye Infirmary/UK
BE-5.2.3	12:00-12:15	Segmentation of Nuclei in Cancer Tissue Images: Contrasting Active Contours with Morphology-Based Approach <u>S. D. Cataldo</u> ¹ , <u>E. Ficarra</u> ¹ , <u>A. Acquaviva</u> ² , <u>E. Macii</u> ¹ ; ¹ Politecnico di Torino/IT, ² University of Verona/IT
BE-5.2.4	12:15-12:30	Local Based Fuzzy Clustering for Segmentation of MR Brain Images <u>Y. Lv</u> ¹ , <u>L. Dou</u> ¹ , <u>N. Che</u> ² , <u>J. Kong</u> ¹ , <u>B. Zhang</u> ¹ , <u>J. Wang</u> ¹ , <u>D. Liu</u> ¹ ; ¹ Northeast Normal University/CN, ² Ji Lin University/CN,
BE-5.2.5	12:30-12:45	Automatic DNA Microarray Gridding based on Support Vector Machines <u>D. Bariamis</u> , <u>D. Maroulis</u> , <u>D. K. Iakovidis</u> ; <u>University of Athens/GR</u>
BE-5.2.6	12:45-13:00	Improving Renal Cell Carcinoma Classification by Automatic Region of Interest Selection <u>Q. Chaudry</u> ¹ , <u>S. H. Raza</u> ¹ , <u>Y. Sharma</u> ¹ , <u>A. Young</u> ² , <u>M. Wang</u> ¹ ; ¹ Georgia Institute of Technology/USA, ² Emory University/USA

* Demo presentation

Thursday, October 9, 11:30 – 13:00

Session BI-7.1

Templar's

Query Languages, Interoperability, Bio-Ontology and Data Mining

Chairs

A. Zhang (State University of New York/USA), M. Tsiknakis (FORTH/GR)

- BI-7.1.1 11:30-11:45 A Medical, Description Logic based, Ontology for Skin Lesion Images
M. Maragoudakis¹, I. Maglogiannis², D. Lymberopoulos³; ¹University of the Aegean/GR, ²University of Central Greece/GR, ³University of Patras/GR
- BI-7.1.2 11:45-12:00 A Framework for the Development of Biomedical Text Mining Software Tools
A. Lourenço¹, R. Carreira¹, S. Carneiro¹, P. Maia¹, D. Glez-Peña², F. Fdez-Riverola², E. C. Ferreira¹, I. Rocha¹, M. Rocha¹; ¹University of Minho/PT, ²University of Vigo/ES
- BI-7.1.3 12:00-12:15 Message Communication Server for Medical Information Systems' Interoperability
L. Kolovou, D. Lymberopoulos; University of Patras/GR
- BI-7.1.4 12:15-12:30 A High Throughput Approach to Keep Alive a Web-Based Database System for Multiple Search Among Published Bioinformatics Tools and Databases
V. Atlamazoglou¹, T. Thireou¹, A. Alexandridou², G. Spyrou²; ¹National Technical University of Athens/GR, ²Biomedical Research Foundation of the Academy of Athens/GR
- BI-7.1.5 12:30-12:45 Parallel Integration of Heterogeneous Genome-Wide Data Sources
D. Greene, K. Bryan, P. Cunningham; University College Dublin/IE
- BI-7.1.6 12:45-13:00 Polyadenylation Site Prediction Using Interesting Emerging Patterns
G. Tzanis, I. Kavakiotis, I. Vlahavas; Aristotle University of Thessaloniki/GR

Thursday, October 9, 11:30 – 13:00

Session BI-5.1

Abbey

Genes and their Regulation

Chairs

M. Reczko (FORTH/GR), S. Kossida (Biomedical Research Foundation of the Academy of Athens/GR)

- BI-5.1.1 11:30-11:45 GOmir: a Stand-alone Application for Human microRNA Target Analysis and Gene Ontology Clustering
P. Zotos¹, G. Papachristoudis², M. G. Roubelakis¹, I. Michalopoulos¹, S. Kossida¹, N. P. Anagnou¹, K. I. Pappa^{1,3}; ¹Biomedical Research Foundation of the Academy of Athens/GR, ²Massachusetts Institute of Technology/USA, ³University of Athens/GR
- BI-5.1.2 11:45-12:00 miRNA Target Prediction through Mining of miRNA Relationships
Y. Zhang, S. de Bruin, F. J. Verbeek; Leiden University/NL
- BI-5.1.3 12:00-12:15 Modeling Gene Regulation and Spatial Organization of Sequence Based Motifs
J. Supper¹, C. aufm Kampe¹, D. Wanke¹, K. W. Berendzen¹, K. Harter¹, R. Bonneau², A. Zell¹; ¹University of Tübingen/DE, ²New York University/USA
- BI-5.1.4 12:15-12:30 Mature miRNA Identification via the Use of a Naive Bayes Classifier
K. Gkirtzou^{1,2}, P. Tsakalides^{1,2}, P. Poirazi²; ¹University of Crete/GR, ²Foundation of Research and Technology Hellas/GR
- BI-5.1.5 12:30-12:45 Large-Scale Approximate Intervention Strategies for Probabilistic Boolean Networks as Models of Gene Regulation
M. Tan¹, R. Alhaji¹, F. Polat²; ¹University of Calgary/CA, ²Middle East Technical University/TR
- BI-5.1.6 12:45-13:00 Motifs in Regulatory Networks and their Structural Robustness
A. Elena, H. B. Amor, N. Glade, J. Demongeot; University J. Fourier/FR

Thursday, October 9, 14:00 – 15:00

Plenary Session

Olympia 2

Chair

N. Bourbakis (Wright State University/USA)

- PL. 6 14:00-14:40 Frontiers of Neuroengineering with Focus on Brain Machine Interface and Neural Prostheses
N. Thakor; The Johns Hopkins School of Medicine/USA
- 14:40-15:00 Awards

Thursday, October 9, 15:00 – 16:30

Session BE-5.3

Olympia 1

Biomedical Image Processing & Analysis

Chairs

C. Pattichis (University of Cyprus/CY), J. Stoitsis (National Technical University of Athens/GR)

- BE-5.3.1 15:00-15:15 Matrix Factorization Techniques for Analysis of Imaging Mass Spectrometry Data
P. Sij, R. Moffitt, R. M. Parry, Y. Chen, Y. Liu, M. C. Sullards, A. H. Merrill, M. D. Wang; Georgia Tech/USA
- BE-5.3.2 15:15-15:30 A Machine Learning Based System for Multichannel Fluorescence Analysis in Pancreatic Tissue Bioimages
J. Herold¹, S. Abouna², L. Zhou², S. Pelengaris², D. Epstein², M. Khan², T. Nattkemper¹; ¹University of Bielefeld/DE, ²University of Warwick/UK
- BE-5.3.3 15:30-15:45 A Multiple Expert-based Melanoma Recognition System for Dermoscopic Images of Pigmented Skin Lesions
M. M. Rahman, P. Bhattacharya, B. C. Desai; Concordia University/CA
- BE-5.3.4 15:45-16:00 Lungs SPECT Image Processing for Volume and Perfusion Index Estimation
M. Lyra¹, M. Gavrilelli², V. Lyra³, G. Kokona¹, G. Limouris¹, K. Skouroliaou⁴; ¹University of Athens/GR, ²Medical Imaging Center/GR, ³Attikon University Hospital/GR, ⁴Technical Institute of Athens/GR,
- BE-5.3.5 16:00-16:15 Ultrasound Imaging Media Layer Texture Analysis of the Carotid Artery
C. Loizou¹, M. Pantziaris², A. Nicolaidis³, A. Spanias⁴, M. Pattichis⁵, C. Pattichis⁶; ¹Intercollege/CY, ²Cyprus Institute of Neurology and Genetics/CY, ³Vascular Screening and Diagnostic Center/CY, ⁴Arizona State University/USA, ⁵University of New Mexico/USA, ⁶University of Cyprus/CY
- BE-5.3.6 16:15-16:30 The Study of Hepatic NF- κ B Transcription Dynamics via Fluorescent Image Analysis
A. McArdle, K. McMenemy, S. Ferguson; Queen's University Belfast/UK

Thursday, October 9, 15:00 – 16:30

Session BI-1.1

Templar's

Algorithms, Modeling and Simulation of Bio-Sets

Chairs

G. Spyrou (Biomedical Research Foundation of the Academy of Athens/GR), P. Tsakalides (FORTH/GR)

- BI-1.1.1 15:00-15:15 A Branch-and-Bound Approach for Knowledge-based Protein Structure Assembly
G. Zheng¹, G. Narasimhan²; ¹North Carolina Central University/USA, ²Florida International University/USA
- BI-1.1.2 15:15-15:30 GPM: A Graph Pattern Matching Kernel with Diffusion for Chemical Compound Classification
A. Smalter, J. Huan, G. Lushington; University of Kansas/USA
- BI-1.1.3 15:30-15:45 Structure Feature Selection for Chemical Compound Classification
H. Fei, J. Huan; University of Kansas/USA
- BI-1.1.4 15:45-16:00 An Enhanced Markov Clustering Method for Detecting Protein Complexes
C. Moschopoulos¹, G. Pavlopoulos², S. Likothanassis¹, S. Kossida³; ¹University of Patras/GR, ²European Molecular Biology Laboratory/DE, ³Biomedical Research Foundation of the Academy of Athens/GR
- BI-1.1.5 16:00-16:15 Physical Understanding via Reduction of Complex Multiscale Models: Glycolysis in *Saccharomyces cerevisiae*
P. Kourdis¹, D. Goussis¹, R. Steuer²; ¹National Technical University of Athens/GR, ²Institute for Biology/DE
- BI-1.1.6 16:15-16:30 Validating Models of Bacterial Chemotaxis by Simulating the Random Motility Coefficient
Z. Wang, M. Kim, G. Rosen; Drexel University/USA

		Thursday, October 9, 15:00 – 16:30	
Session BE-3.1			Abbey
		Biomedical & Biological Sensors	
<i>Chairs</i>		<i>T. Tamura (Chiba University/JP), I. Karanasiou (National Technical University of Athens)</i>	
BE-3.1.1	15:00-15:15	Comparative Study of Empirical Mode Decomposition Applied in Experimental Biosignals <i>A. Karagiannis, P. Constantinou; National Technical University of Athens/GR</i>	
BE-3.1.2	15:15-15:30	On the Use of Ultrasonic Communications in Biosensor Networks <i>A. Ifantis, A. Kalis; Athens Information Technology/GR</i>	
BE-3.1.3	15:30-15:45	Passive Focused Monitoring and Non-invasive Irradiation of Head Tissue Phantoms at Microwave Frequencies <i>K. Karathanasis, I. Gouzouasis, I. Karanasiou, G. Stratakos, N. Uzunoglu; National Technical University of Athens/GR</i>	
BE-3.1.4	15:45-16:00	Efficient Implementation of Biomedical Hardware Using Open Source Descriptions and Behavioral Synthesis <i>G. Economakos; National Technical University of Athens/GR</i>	
BE-3.1.5	16:00-16:15	A Formal Language Approach for Multi-Sensor Wearable Health-Monitoring Systems <i>A. Pantelopoulos, N. Bourbakis; Wright State University, AIIS Inc./USA</i>	
BE-3.1.6	16:15-16:30	A Study to Demonstrate the Use of an Air Bag Device to Prevent Fall-related Injuries <i>T. Tamura¹, T. Yoshimura², M. Sekine¹; ¹Chiba University/JP, ²Tokyo Metropolitan College of Industrial Technology/JP</i>	
		Thursday, October 9, 16:50 – 18:20	
Session BE-4.2			Olympia 1
		Biomedical Data Engineering	
<i>Chairs</i>		<i>S. Mougiakakou (National Technical University of Athens/GR), D. Maroulis (University of Athens/GR)</i>	
BE-4.2.1	16:50-17:05	Assessment of the Risk of Coronary Heart Event Based on Data Mining <i>M. Karaolis¹, J. Moutiris², C. Pattichis¹; ¹University of Cyprus/CY, ²Paphos General Hospital/CY</i>	
BE-4.2.2	17:05-17:20	Feature Selection and Classification for Assessment of Chronic Stroke Impairment <i>J. Y. Jung, J. I. Glasgow, S. H. Scott; Queen's University/CA</i>	
BE-4.2.3	17:20-17:35	Medical Disease Prediction Using Artificial Neural Networks <i>D. Mantzaris¹, G. Anastassopoulos¹, D. Lymberopoulos²; ¹Democritus University of Thrace/GR, ²University of Patras/GR</i>	
BE-4.2.4	17:35-17:50	Pathological Voice Discrimination using Cepstral Analysis, Vector Quantization and Hidden Markov Models <i>S. Costa¹, B. G. Aguiar. Neto², J. M. Fechine²; ¹Federal Center of Technological Education of Paraíba/BR, ²Federal University of Campina Grande/BR</i>	
BE-4.2.5	17:50-18:05	Classification of Event-Related Potentials Associated with Response Errors in Actors <i>P. Asvestas¹, E. Ventouras¹, I. Karanasiou², G. Matsopoulos²; ¹Technological Educational Institute of Athens/GR, ²National Technical University of Athens/GR</i>	
BE-4.2.6	18:05-18:20	Intelligent Patient Profiling for Diagnosis, Staging and Treatment Selection in Colon Cancer <i>Y. Goletsis, T. P. Exarchos, N. Giannakeas, D. I. Fotiadis; University of Ioannina/GR</i>	
		Thursday, October 9, 16:50 – 18:20	
Session BI-4.1			Templar's
		Gene Expression Analysis	
<i>Chairs</i>		<i>R. Brause (Johann Wolfgang Goethe-Universität/DE), F. Kalatzis (University of Ioannina/GR)</i>	
BI-4.1.1	16:50-17:05	Signature Genes in Human Heart Failure Based on Gene Expression Analysis: Can we Identify a Unique Set? <i>H. Wang, H. Zheng; University of Ulster/UK</i>	
BI-4.1.2	17:05-17:20	Normalized EM Algorithm for Tumor Clustering using Gene Expression Data <i>P. Nguyen, V. Nguyen; University of New South Wales/AU</i>	
BI-4.1.3	17:20-17:35	Time Series Gene Expression Data Clustering and Pattern Extraction in <i>Arabidopsis</i>	

		<i>Thaliana</i> Phosphatase-encoding Genes <i>P. S. Bidari</i> ¹ , <i>R. Manshaei</i> ¹ , <i>J. Alirezaei</i> ¹ , <i>M. A. Malboobi</i> ² ; ¹ <i>K. N. Toosi University of Technology/IR</i> , ² <i>National Institute for Genetic Engineering and Biotechnology/IR</i>
BI-4.1.4	17:35-17:50	A Novel Evolutionary Algorithm for Bi-clustering of Gene Expression Data Based on the Order Preserving Sub-Matrix (OPSM) Constraint <i>H. Roh</i> , <i>S. Park</i> ; <i>Yonsei University/KR</i>
BI-4.1.5	17:50-18:05	An Information Theoretic Framework for Genomic Data Analysis <i>A. McKenna</i> ¹ , <i>G. Alterovitz</i> ² ; ¹ <i>Boston University/USA</i> , ² <i>MIT/USA</i>
BI-4.1.6	18:05-18:20	GOMA: Web Utility for Direct Finding of Enriched Gene Ontology Terms from Gene Expression Profile <i>E. Mizutani</i> , <i>J. Sese</i> ; <i>Ochanomizu University/JP</i>

Thursday, October 9, 16:50 – 18:20

Session BI-6.1

Abbey

Protein Structure Prediction and Molecular Simulation

Chairs

A. Elofsson (Stockholm University/SE), *G. Spyrou (Biomedical Research Foundation of the Academy of Athens/GR)*

BI-6.1.1	16:50-17:05	Extracting Decision Rules in Predicting of Protein Secondary Structure <i>N. M. Nguyen</i> ¹ , <i>J. Zurada</i> ² , <i>J. Rajapakse</i> ¹ ; ¹ <i>Nanyang Technological University/SG</i> , ² <i>University of Louisville/USA</i>
BI-6.1.2	17:05-17:20	Distance-based Indexing of Residue Contacts for Protein Structure Retrieval and Alignment <i>A. Sacan</i> ¹ , <i>I. H. Toroslu</i> ² , <i>H. Ferhatosmanoglu</i> ¹ ; ¹ <i>The Ohio State University/USA</i> , ² <i>Middle East Technical University/TR</i>
BI-6.1.3	17:20-17:35	Pruning Neural Networks for Protein Secondary Structure Prediction <i>S. Babaei</i> ¹ , <i>A. Seyyedsalehi</i> ¹ , <i>A. Geranmayeh</i> ² ; ¹ <i>Amirkabir University of Technology/IR</i> , ² <i>Darmstadt University of Technology/DE</i>
BI-6.1.4	17:35-17:50	Investigation Into the Role of Sequence-Driven-Features for Prediction of Protein Structural Classes <i>S. Nanuwa</i> , <i>H. Seker</i> ; <i>De Montfort University/UK</i>
BI-6.1.5	17:50-18:05	Protein Similarity Networks and Genetic Algorithm Driven Feature Selection for Fold Recognition <i>I. K. Valavanis</i> ¹ , <i>G. M. Spyrou</i> ² , <i>K. S. Nikita</i> ¹ ; ¹ <i>National Technical University of Athens/GR</i> , ² <i>Biomedical Research Foundation of Academy of Athens/GR</i>
BI-6.1.6	18:05-18:20	A Local Structural Alignment Algorithm with Variable Length Alignment Fragment Pairs <i>V. Kundeti</i> , <i>S. Rajasekaran</i> ; <i>University of Connecticut/USA</i>

Friday, October 10, 08:00 – 09:20

Plenary Session

Olympia 2

Chair

L. M. Roa (University of Seville/ES)

PL. 7	08:00-08:40	Quo Vadis Cardiovascular Informatics? <i>I. Kakadiaris</i> ; <i>University of Houston/USA</i>
PL. 8	08:40-09:20	On Ellipsoidal Tumours <i>G. Dassios</i> ; <i>University of Cambridge/UK</i>

Friday, October 10, 09:20 – 10:50

Session BE-5.4

Olympia 1

Biomedical Image Processing & Analysis

Chairs

K. Cleary (Georgetown University/USA), *S. Pavlopoulos (National Technical University of Athens/GR)*

BE-5.4.1	09:20-09:35	Medical Image Authentication and Self-Correction through an Adaptive Reversible Watermarking Technique <i>V. E. Fotopoulos</i> , <i>M. L. Stavrinou</i> , <i>A. N. Skodras</i> ; <i>Hellenic Open University/GR</i>
BE-5.4.2	09:35-09:50	Determination of the Mechanoelastic Properties of Parasites via Analysis of their Microscopic Images

- D. Arabadjis¹, P. Rousopoulos¹, C. Papaodysseus¹, M. Panagopoulos¹, P. Loumou¹, G. Theodoropoulos²; ¹National Technical University of Athens/GR, ²Agricultural University of Athens/GR*
- BE-5.4.3 09:50-10:05 Automatic Frame Reduction of Wireless Capsule Endoscopy Video
S. Tsevas¹, D. Iakovidis², D. Maroulis², E. Pavlakis³; ¹Automatic Frame Reduction of Wireless Capsule Endoscopy Video/GR, ²University of Athens/GR, ³Aretaieion Hospital/GR
- BE-5.4.4 10:05-10:20 A Methodology for Detecting Blood-based Abnormalities in Wireless Capsule Endoscopy Videos
A. Karargyris, N. Bourbakis; Wright State University/USA
- BE-5.4.5 10:20-10:35 Medical Needle Steering for Lung Biopsy: Experimental Results in Tissue Phantoms Using a Robotic Needle Driver
J. Ding¹, D. Stoianovic², D. Petrisor², P. Mozer², R. Avila³, L. Ibanez³, W. Turner³, D. Yankelwitz⁴, E. Wilson¹, F. Banovac¹, K. Cleary¹; ¹Georgetown University/USA, ²Johns Hopkins Medical Institutions/USA, ³Kitware Inc./USA, ⁴Weill-Cornell Medical Center/USA
- BE-5.4.6 10:35-10:50 A Simple Sequential Pose Recognition Model for Sleep Apnea
C. W. Wang, A. Hunter; University of Lincoln/UK

Friday, October 10, 09:20 – 10:50

Session BI-1.2

Templar's

Algorithms, Modeling and Simulation of Bio-Sets

Chairs

E. Bongcam-Rudloff (Linnaeus Center of Bioinformatics/SE), J. Demongeot (University J. Fourier/FR)

- BI-1.2.1 09:20-09:35 Clinical Trial Simulation in Grid Environments
D. Kyriazis, A. Menychtas, D. Dionysiou, G. Stamatakos, T. Varvarigou; National Technical University of Athens/GR
- BI-1.2.2 09:35-09:50 Fast Parallel Bio-Molecular Logic Computing Algorithms of Discrete Logarithm
Y. Y. Shih¹, M. S.H. Ho²; ¹National Taipei College of Business/TW, ²Ming Chuan University/TW
- BI-1.2.3 09:50-10:05 A Web Based Tool for Integration of Molecular Pathway Models
E. Sciacca¹, S. V. A. Ayyadurai², F. C. Dewey²; ¹University of Catania/IT, ²MIT/USA
- BI-1.2.4 10:05-10:20 Faster Greedy Algorithms for Multiple Degenerate Primer Selection
S. Balla¹, S. Rajasekeran², I. Mandoiu²; ¹Memorial Sloan-Kettering Cancer Center/USA, ²University of Connecticut/USA
- BI-1.2.5 10:20-10:35 Clock-constrained Tree Proposal Operators in Bayesian Phylogenetic Inference
S. Hoehna, M. Defoin-Platel, A. J. Drummond; University of Auckland/NZ
- BI-1.2.6 10:35-10:50 Genetic Algorithm Based Feature Selection for Mass Spectrometry Data
Y. Li, Y. Liu, L. Bai; Shandong Institute fo Light Industry/CN

Friday, October 10, 09:20 – 10:35

Session BI-2.1

Abbey

Bio-Imaging

Chairs

G. Kontaxakis (Universidad Politécnica de Madrid/ES), K. Marias (FORTH/GR)

- BI-2.1.1 09:20-09:35 Automatic Quality Assessment for Fluorescence Microscopy Images
P. Paul¹, D. Kalamatianos¹, H. Duessmann², H. Huber²; ¹National University of Ireland/IE, ²Royal College of Surgeon Ireland/IE
- BI-2.1.2 09:35-09:50 A New Method for Processing the Forward Solver Data in Fluorescence Molecular Imaging
D. Gorpas, K. Politopoulos, D. Yova; National Technical University of Athens/GR
- BI-2.1.3 09:50-10:05 Modeling of Regional Dynamic CO₂ Reactivity in Respiratory Related Brain Areas Using BOLD fMRI
G. D. Mitsis¹, A. K. Harvey², S. Dirckx², S. D. Mayhew², R. Rogers², I. Tracey², R. G. Wise³, K. T. S. Pattinson²; ¹National Technical University of Athens/GR, ²University of Oxford/UK, ³Cardiff University/UK
- BI-2.1.4 10:05-10:20 Identification of Significant Metabolic Markers from MRSI Data for Brain Cancer Classification
M. Kounelakis¹, M. Zervakis¹, M. Blazadonakis¹, G. Postma², L. Buydens², A. Heerschap³, X. Kotsiakis⁴; ¹Technical University of Crete/GR, ²Radboud University/NL, ³University Medical Center Nijmegen/NL, ⁴General Hospital of Chania/GR

BI-2.1.5 10:20-10:35 A Study of the Parameters Affecting Minimum Detectable Activity Concentration Level of Clinical LSO PET Scanners
N. A. Karakatsanis, K. S. Nikita; National Technical University of Athens/GR

Friday, October 10, 10:50 – 11:30

Poster Session

Olympia 2

BIOINFORMATICS

- BI-P.1 10:50-11:30 An Information Theoretic Divergence for Microarray Data Clustering
X. V. Nguyen, N. M. Phuong; The University of New South Wales/AU
- BI-P.2 10:50-11:30 Using ANOVA to Analyse Thalidomide's Molecular Mechanisms in Human PBMC Microarrays
R. Paiva, B. Dias, M. R. Alves, U. Lopes, F. Nobre; Federal University of Rio de Janeiro/BR
- BI-P.3 10:50-11:30 Signaling Biomarker Pattern Discovery Using Reverse Phase Protein Microarray
Y. B. Kim, J. Gao, J. V. Pastor, K. Rosenblatt; University of Texas/USA
- BI-P.4 10:50-11:30 cDNA Microarray Analysis of a Glucocorticoid Treated Acute Lymphoblastic Leukemia Cell Line
E. Sifakis¹, G. Lambrou², A. Prentza¹, D. Koutsouris¹, F. Tzortzotou-Stathopoulou²; ¹National Technical University of Athens/GR, ²University of Athens/GR
- BI-P.5 10:50-11:30 Development of a Universal, Flexible and Freely Available Database Management System for Gene-Centered Data Collection, Curation and Display of DNA Variation
S. Zaimidou¹, S. van Baal¹, T. D. Smith², K. Mitropoulos³, M. Ljubic⁴, D. Radojkovic⁴, R. G. Cotton², G. P. Patrinos¹; ¹Erasmus University Medical Center/NL, ²The University of Melbourne/AU, ³Asclepion Genetics/CH, ⁴Institute of Molecular Genetics and Genetic Engineering/RS
- BI-P.6 10:50-11:30 Use of Gene Ontology Semantic Information in Protein Interaction Data Visualization
R. Massanet, P. Caminal, A. Perera; Universitat Politècnica de Catalunya/ES
- BI-P.7 10:50-11:30 Benefits of Using Paired Controls for Analyzing Gene Expression of Prostate Cancer
S. Haney, M. Kam, L. Hrebien; Drexel University/USA
- BI-P.8 10:50-11:30 A Computer Simulation Model of Gene Replacement in Vector Populations
M. Guevara, E. E. Vallejo; ITESM Campus Estado de Mexico/MX
- BI-P.9 10:50-11:30 Complementary Grouping of Amino Acids based on base-pairing
M. Park, B. G. Kim; University of Massachusetts/USA
- BI-P.10 10:50-11:30 Phylogenetic Reconstruction with Disk-Covering and Bayesian Approaches
Y. Guo, J. Tang; University of South Carolina/USA
- BI-P.11 10:50-11:30 Identification of Active Biological Networks and Common Expression Conditions
M. Seki, J. Sese; Ochanomizu University/JP
- BI-P.12 10:50-11:30 Novel Weighted Amino Acid Composition for Prediction of Protein Structural Classes within the Context of Multi-sensor Data Fusion Approach
H. Seker; De Montfort University/UK
- BI-P.13 10:50-11:30 Fast Parallel Bio-Molecular Logic Computing Algorithms: Protein Folding
Y. Y. Shih¹, M. S. H. Ho²; ¹National Taipei College of Business/TW, ²Ming Chuan University/TW
- BI-P.14 10:50-11:30 Detection of Transcription Factor Binding Sites Using Rényi Entropy
J. Maynou¹, M. Vallverdú¹, F. Clariá², A. Perera¹, P. Caminal¹; ¹Technical University of Catalonia/ES, ²University of Lleida/ES
- BI-P.15 10:50-11:30 BioSumm: a Novel Summarizer Oriented to Biological Information
E. Baralis, A. Fiori, L. Montrucchio; Politecnico di Torino/IT
- BI-P.16 10:50-11:30 Maximum Likelihood Reconstruction for Fluorescence Optical Projection Tomography
A. Darrell¹, H. Meyer¹, U. Birk¹, K. Marias¹, M. Brady², J. Ripoll¹; ¹Foundation for Research and Technology Hellas/GR, ²University of Oxford/UK
- BI-P.17 10:50-11:30 Classification of Laser Induced Fluorescence Spectra from Normal and Malignant Tissues using Learning Vector Quantization Neural Network in Bladder Cancer Diagnosis
K. Gopal^{1,2}, M. K. Komal³, K.S. Chowdhary³, P. Ajeethkumar³, V. K. Unnikrishnan³, P. Vijendra³, C. Arun³, N. Mads¹, C. Santhosh³; ¹University of Copenhagen/DK, ²Nordic Bioscience A/S/DK, ³Manipal University/IN
- BI-6.1.6* 10:50-11:30 A Local Structural Alignment Algorithm with Variable Length Alignment Fragment Pairs
V. Kundeti, S. Rajasekaran; University of Connecticut/USA
- BI-1.2.3* 10:50-11:30 A Web Based Tool for Integration of Molecular Pathway Models
E. Sciacca¹, S. V. A. Ayyadura², F. C. Dewey²; ¹University of Catania/IT, ²MIT/USA

* Demo presentation

BI-9.1.6* 10:50-11:30 Building in-silico Pathway SBML Models from Heterogeneous Sources
I. Kanaris¹, K. Moutselos¹, A. Chatziioannou², I. Maglogiannis¹, F. Kolisis²; ¹University of Aegean/GR, ²National Hellenic Research Foundation/GR

Friday, October 10, 11:30 – 13:00

Session BI-3.2

Olympia 1

Functional Genomics, Proteomics

Chairs D. Kafetzopoulos (FORTH/GR), E. Manolakos (University of Athens/GR)

- BI-3.2.1 11:30-11:45 A New Gene Expression Signature Related to Breast Cancer Estrogen Receptor Status
E. Christodoulou, M. Ioannou, G. Papagiannakis, E. Stathopoulos, D. Kafetzopoulos, M. Kafousi, T. Margaritis, et. al.; Foundation for Research and Technology Hellas/GR, University of Crete/GR, Prolipsis Diagnostic Breast Center/GR
- BI-3.2.2 11:45-12:00 A Novel Information Theoretic Method for Detecting Gene-Gene and Gene-Environment Interactions in Complex Diseases
P. Chanda, A. Zhang, M. Ramanathan; State University of New York at Buffalo/USA
- BI-3.2.3 12:00-12:15 Gene – Nutrition Interactions in the Onset of Obesity as Cardiovascular Disease Risk Factor Based on a Computational Intelligence Method
I. K. Valavanis¹, S. G. Mouggiakakou¹, S. Marinos¹, G. Karkalis¹, K. A. Grimaldi², R. Gill², K. S. Nikita¹; ¹National Technical University of Athens/GR, ²Sciona, Inc./USA
- BI-3.2.4 12:15-12:30 Floating Feature Selection for Multiloci Association of Quantitative Traits in Sib-pairs analysis
H. Brune¹, A. Perera¹, A. Buil², M. S. Llea², J. C. Souto², J. Fontcuberta², M. Vallverdu¹, M. Soria², P. Caminal²; ¹Universitat Politècnica de Catalunya/ES, ²Hospital de la Santa Creu i Sant Pau/ES
- BI-3.2.5 12:30-12:45 Charge State Determination of Peptide Tandem Mass Spectra Using Support Vector Machine (SVM)
A. M. Zou, J. R. Ding, J. H. Shi, F. X. Wu; University of Saskatchewan/CA
- BI-3.2.6 12:45-13:00 Systematic Elicitation of Sequence Patterns Associated with Non-proline *cis* Peptide Bonds
K. Exarchos, T. Exarchos, C. Papaloukas, A. Troganis, D. Fotiadis; University of Ioannina/GR

Friday, October 10, 11:30 – 13:00

Session BI-7.2

Templar's

CASIMIR-Database Interoperability & Ontologies

- Chairs V. Aidinis (B.S.R.C. Alexander Fleming/GR), P. N. Schofield (University of Cambridge/UK)*
- BI-7.2.1 CASIMIR: Coordination and Sustainability of International Mouse Informatics Resources
J. M. Hancock¹, P.N. Schofield², C. Chandras³, M. Zouberakis³, V. Aidinis³, D. Smedley², N. Rosenthal¹, K. Schughart², The CASIMIR Consortium; ¹MRC Harwell/UK, ²University of Cambridge/UK, ³B.S.R.C. Alexander Fleming/GR, ⁴European Molecular Biology Laboratory/IT, ⁵Helmholtz Centre for Infection Research/DE,
- BI-7.2.2 caBIG™: Opportunities and Challenges to Creating a Federated Global Network of Interoperable Information Systems
G. A. Komatsoulis; National Cancer Institute Center for Biomedical Informatics and Information Technology/USA
- BI-7.2.3 Database Interoperability through Web Services and Ontologies
T. Sellis¹, D. Skoutas¹, K. Staikos²; ¹National Technical University of Athens/GR, ²European Dynamics SA/GR
- BI-7.2.4 Towards Dynamic Database Infrastructures for Mouse Genetics
M. A. Swertz¹, D. Smedley², K. Wolstencroft³, R. Alberts⁴, M. Zouberakis⁵, V. Aidinis⁵, K. Schughart⁴, P. Schofield², R. C. Jansen¹, The CASIMIR Consortium; ¹University of Groningen/NL, ²European Bioinformatics Institute/UK, ³University of Manchester/UK, ⁴Helmholtz Center for Infection Research/DE, ⁵B.S.R.C. Alexander Fleming/GR, ⁶University of Cambridge/UK
- BI-7.2.5 The Mouse Resource Browser (MRB) – A Near-Complete Registry of Mouse Resources
M. Zouberakis¹, C. Chandras¹, J. M. Hancock², P.N. Schofield³, V. Aidinis¹; ¹B.S.R.C. Alexander Fleming/GR, ²MRC Harwell/UK, ³University of Cambridge/UK
- BI-7.2.6 Using Bio-ontologies as Data Annotation, Integration & Analytical Tools at the Mouse Genome Informatics Resource

- BI-7.2.7 A. V. Anagnostopoulos, J. A. Blake, C. J. Bult, M. Ringwald, J. E. Richardson, J. A. Kadin, J. T. Eppig; *The Jackson Laboratory/USA*
One Medicine: Integrating Mouse and Human Disease Phenotypes
P. N. Schofield¹, G. V. Gkoutos^{1,2}, J. Sundberg³, J. M. Hancock⁴, *The CASIMIR Consortium*; ¹University of Cambridge/UK, ²National Hellenic Research Foundation/GR, ³The Jackson Laboratory/USA, ⁴MRC Harwell/UK
- BI-7.2.8 Digital Preservation – Financial Sustainability of Biological Data and Material Resources
C. Chandras¹, T. Weaver², M. Zouberakis¹, J. M. Hancock³, P. N. Schofield⁴, V. Aidinis¹; ¹B.S.R.C. Alexander Fleming/GR, ²Geneservice Limited/UK, ³MRC Harwell/UK, ⁴University of Cambridge/UK

Session BE-6.1 Friday, October 10, 11:30 – 13:00 **Abbey**
Engineering Models in Bio-Medicine

Chairs G. Rosen (*Drexel University/USA*), O. Milenkovic (*University of Illinois/USA*)

- BE-6.1.1 11:30-11:45 Local Haemodynamics and Intimal Hyperplasia at the Venous Side of Porcine Carotid Artery - Jugular Vein Shunt
T. Manos¹, D. Sokolis², A. Giagini², J. Kakisis³, C. Davos², P. E. Karayannacos², N. Stergiopoulos⁴, S. Tsangaris¹; ¹National Technical University of Athens/GR, ²Foundation of Biomedical Research, Academy of Athens/GR, ³University of Athens/GR, ⁴Swiss Federal Institute of Technology/CH
- BE-6.1.2 11:45-12:00 2D Oculomotor Plant Mathematical Model for Eye Movement Simulation
O. Komogortsev, U. Jayarathna; *Texas State University/USA*
- BE-6.1.3 12:00-12:15 MRI-Guided Robot-Assisted Lumpectomy for Surgical Management of Early Breast Cancer: Preliminary Investigation and Use Case Analysis
Y. Yu¹, K. Yan¹, T. Podder¹, K. Brill¹, L. Liao^{2,3}; ¹Thomas Jefferson University/USA, ²Cooper Cancer Institute/USA, ³Robert Wood Johnson University/USA
- BE-6.1.4 12:15-12:30 A Generic Grid Interface and Execution Framework for Biomedical Applications
K. Vegoudakis, V. Koutkias, A. Malousi, I. Chouvarda, N. Maglaveras; *Aristotle University of Thessaloniki/GR*
- BE-6.1.5 12:30-12:45 An Evaluation of Magnetically Induced Current Density in Human's Body, based on Measurements Conducted in a High Voltage Center of 150/20kV
A. Paraskevopoulos, P. Bourkas, C. Karagiannopoulos; *National Technical University of Athens/GR*
- BE-6.1.6 12:45-13:00 *Modelling glycaemia of diabetics: An Application*
F. Benmakrouha¹, C. Hespel¹, M. I. V Foursov²; ¹INSA -IRISA RENNES/FR, ²IFSIC-IRISA RENNES/FR

Plenary Session Friday, October 10, 14:00 – 15:20 **Olympia 2**

Chair G. Alterovitz (*MIT/USA*)

- PL .9 14:00-14:40 An Effective Approach to Magnetoencephalography
T. Fokas; *University of Cambridge/UK*
- PL. 10 14:40-15:20 Biobanks, Biomolecular Resources and Bioinformatics for Health Care and Medical Research in Europe
E. Bongcam-Rudloff; *Linnaeus Center of Bioinformatics/SE*

Session BE-5.5 Friday, October 10, 15:20 – 16:35 **Olympia 1**
Biomedical Image Processing & Analysis

Chairs D. Lymberopoulos (*University of Patras/GR*), Y. Yu (*Thomas Jefferson University/USA*)

- BE-5.5.1 15:20-15:35 Preliminary Performance Evaluation of a High Resolution Small Animal PET Scanner with Monolithic Crystals and Depth-of-Interaction Encoding
M. Balcerzyk¹, G. Kontaxakis², M. Delgado¹, L. Garcia¹, G. M. Benlloch³, M. A. Poso², ¹Univ. Complutense de Madrid/ES, ²Univ. Politécnica de Madrid/ES, ³Universidad de

		<i>Valencia and CSIC/ES</i>
BE-5.5.2	15:35-15:50	Assessment of Iterative Image Reconstruction Techniques for Small-Animal PET Imaging Applications <i>E. Karali, S. Pavlopoulos, D. Koutsouris; National Technical University of Athens/GR</i>
BE-5.5.3	15:50-16:05	A Sparse Variational Bayesian Approach for fMRI Data Analysis <i>V. P. Oikonomou, E. E. Tripoliti, D. I. Fotiadis; University of Ioannina/GR</i>
BE-5.5.4	16:05-16:20	In-vivo Brain Anatomical Connectivity Using Diffusion Magnetic Resonance Imaging and Fuzzy Connectedness <i>S. Sotiropoulos, C. Tench, L. Bai; University of Nottingham/UK</i>
BE-5.5.5	16:20-16:35	Towards Quantification of Interstitial Pneumonia Patterns in Lung Multidetector CT <i>P. Korfiatis¹, A. Karahaliou¹, A. Kazantzi², C. Kalogeropoulou², L. Costaridou¹; ¹University of Patras/GR, ²University Hospital of Patras/GR</i>

Friday, October 10, 15:20 – 16:50

Session BI-4.2

Templar's

Gene Expression Analysis

<i>Chairs</i>		<i>M. Zervakis (Technical University of Crete/GR), S. Goodison (University of Florida/USA)</i>
BI-4.2.1	15:20-15:35	Performance Validation of Microarray Analysis Methods <i>M. Zervakis¹, M. Blazadonakis¹, A. Banti¹, D. Kafetzopoulos², V. Danilatou², M. Tsiknakis²; ¹Technical University of Crete/GR, ²Foundation of Research and Technology Hellas/GR</i>
BI-4.2.2	15:35-15:50	Differential Gene Expression Graphs: a Data Structure for Classification in DNA Microarrays <i>A. Benso, S. Di Carlo, G. Politano, L. Sterpone; Politecnico di Torino/IT</i>
BI-4.2.3	15:50-16:05	A Computational Approach to Microarray Universal Reference Sample <i>G. Tsiliki, S. Kaforou, M. Kapsetaki, G. Potamias, D. Kafetzopoulos; Foundation of Research and Technology Hellas/GR</i>
BI-4.2.4	16:05-16:20	Combining Singular Value Decomposition and t-test into Hybrid Approach for Significant Gene Extraction from Microarray Data <i>M. Alshalalfa, R. Alhaji, J. Rokne; University of Calgary/CA</i>
BI-4.2.5	16:20-16:35	Combining Nomogram and Microarray Data for Predicting Prostate Cancer Recurrence <i>Y. Sun, Y. Cai, S. Goodison; University of Florida/USA</i>
BI-4.2.6	16:35-16:50	Classification of Multiple Cancer Types in a Hyper Reproducing Kernel Hilbert Space <i>A. Blanco¹, M. Martin-Merino¹, J. De Las Rivas²; ¹Universidad Pontificia de Salamanca/ES, ²Cancer Research Center/ES</i>

Friday, October 10, 15:20 – 16:35

Session BE-1.1

Abbey

Bioengineering Applications for People with Disabilities and the Elderly

<i>Chairs</i>		<i>E. Papazoglou (Drexel University/USA), A. Prentza (National Technical University of Athens/GR),</i>
BE-1.1.1	15:20-15:35	Assessment of Muscle Fatigue using a Probabilistic Framework for an EMG-based Robot Control Scenario <i>P. Artemiadis, K. Kyriakopoulos; National Technical University of Athens/GR</i>
BE-1.1.2	15:35-15:50	Assessment of Diabetic Foot Ulcers with Diffuse Near Infrared Methodology <i>E. S. Papazoglou, M. S. Weingarten, L. Zubkov, M. Neidrauer, K. Pourrezaei; Drexel University/USA</i>
BE-1.1.3	15:50-16:05	Transosseous Application of Low-Intensity Ultrasound at the Tendon-Bone Interface Affects the Healing Rate and Up-Regulates Simultaneously the Expression of Collagen Type I and tRNA ^{Gly} <i>L. Papatheodorou¹, K. Grafanaki¹, S. Giannouli¹, D. Fotiadis², C. Stathopoulos¹, K. Malizos¹; ¹University of Thessaly/GR, ²University of Ioannina/GR,</i>
BE-1.1.4	16:05-16:20	A Proposal of a Fall Detection Algorithm for a MultiDevice Personal Intelligent Platform <i>M. A. Estudillo-Valderrama, L. M. Roa, J. Reina-Tosina, D. Naranjo-Hernández; University of Seville/ES</i>
BE-1.1.5	16:20-16:35	Glycaemic Stability of the Diabetic Patient and Therapeutic Adjustments <i>F. Benmakrouha¹, M. V. Foursov², C. Hespel¹, J. P. Hespel³; ¹Institut National des Sciences Appliquées/FR, ²University of Rennes-1/FR, ³Centre Hospitalier Universitaire of Rennes/FR</i>