

IWBBIO 2017

**INTERNATIONAL WORK-CONFERENCE ON
BIOINFORMATICS AND
BIOMEDICAL ENGINEERING**

PROGRAM

**26-28 April, 2017
Granada (SPAIN)**

Wednesday, April 26, 2017	
8:00-8:30	REGISTRATION DESK <i>(start at 8h but it is opened during all the conference)</i>
8:30-10:00	Session A.1: Computational proteomics
8:30-10:00	Session B.1: Healthcare and eHealth
10:00-10:30	COFFEE BREAK
10:30-11:30	PLENARY LECTURE Prof. Jose Antonio Lorente
11:30-13:00	Session A.2: Bioinformatics for healthcare and diseases (Part I)
11:30-13:00	Session B.2: Data driven biology - new tools, techniques and resources
13:00-15:00	LUNCH & COFFEE
15:00-16:00	Session A.3: Advances in Computational Intelligence for Critical Care. Gamified rehabilitation for disabled people
15:00-16:00	Session B.3: Time lapse experiments and multivariate biostatistics
16:00-17:30	Session A.4: Computational genomics
16:00-17:30	Session B.4: Biomedical signal analysis
17:30-18:30	Session A.5/B.5: Poster Session (Part I)
19:30	Light dinner at the Carmen de los Mártires

NOTES:

- All **Sessions A** will be held in Salón de Grados, Edificio Mecenas (just 20 meters from the Facultad de Ciencias).
- All **Sessions B** will be held in Salón de Grados, Facultad de Ciencias.
- The **Poster Sessions** will be held in the Hall of Facultad de Ciencias.
- Social event (departure): Buses will be at the main entrance of Hotel Granada Center.

Thursday, April 27, 2017			
8:00-10:00	Session A.6: High-throughput bioinformatics tools for genomics	Session B.6: Biomedicine and Biomedical Computing	C.1: GATB Tutorial
10:00-10:30	COFFEE BREAK		
10:30-11:30	PLENARY LECTURE Prof. Joaquín Dopazo		
11:30-13:00	Session A.7: Bioinformatics for healthcare and diseases (Part II)	Session B.7: Biomedical image analysis	C.1: GATB Tutorial
13:00-15:00	LUNCH & COFFEE		
15:00-16:00	Session A.8: Challenges representing large-scale biological data	Session B.8: Oncological big data and new mathematical tools	
16:00-17:45	Session A.9: New advanced in Bioinformatics techniques	Session B.9: Biomedical Engineering (Part I)	
17:45-18:45	Session A.10/B.10: Poster Session II		
19:30	Gala Dinner at Hotel Alhambra Palace		

Friday, April 28, 2017			
8:00-10:00	Session A.11: Computational systems for modelling biological processes	Session B.11: Smart Sensor and Sensor-Network Architectures	
10:00-10:30	COFFEE BREAK		
10:30-11:30	PLENARY LECTURE Prof. Roderic Guigo		
11:30-13:15	Session A.12: Computational systems for modelling biological processes	Session B.12: Biomedical Engineering (Part II)	
13:15-16:15	FREE TIME		
16:15	Visit to the Alhambra (around 4 hours)		

Salón De Grados.

SESSIONS A

Edificio Mecenaz

Salón De Grados.

SESSIONS B

Facultad de Ciencias

Hall

POSTER SESSIONS

Facultad de Ciencias

**MAIN
ENTRANCE**



IWBBIO 2017 FULL PROGRAM

Wednesday, April 26, 2017

Session A.1: Computational proteomics

Chairman: Dr. Alioune Ngom

Prediction of Calmodulin Binding Proteins Using Short Linear Motifs

Yixun Li, Mina Maleki, Nicholas J Carruthers, Luis Rueda, Paul M Stemmer and Alioune Ngom

Chameleon Sequences Convert from Coil to β -Strand when Forming Dimers

Johanna Laibe, Mélanie Broutin, Aaron Caffrey, Barbara Pierscionek and Jean-Christophe Nebel

GODM: Associating Gene Ontology Terms with Pfam Protein Domains

Seyed Ziaeddin Alborzi, Marie-Dominique Devignes and David W. Ritchie

3D protein-structure-oriented discovery of clinical relations across Chronic Lymphocytic Leukemia patients

Konstantinos Mochament, Andreas Agathangelidis, Eleftheria Polychronidou, Elias Kalamaras, Panagiotis Moschonas, Christos Palaskas, Kostas Stamatopoulos, Anna Chailyan, Nanna Overby, Paolo Marcatili, Anastasia Hadzidimitriou and Dimitrios Tzouvaras

Identification and in silico Analysis of Glutathione Reductase transcripts expressed in olive (*Olea europaea* L.) pollen and pistil.

Estefanía García-Quirós, Rosario Carmona, Adoración Zafra, M. Gonzalo Claros and Juan De Dios Alche

Session B.1: Healthcare and eHealth

Chairman: Dr. Tomas Koutny

Experimental Investigation of Frequency Chaos Game Representation for In Silico and Accurate Classification of Viral Pathogens from Genomic Sequences

Emmanuel Adetiba, Joke Badejo, Surendra Thakur, Victor Matthews, Ezekiel Adebiji and Marion Adebiji

Medical entity recognition and negation extraction: assessment of NegEx on health records in Spanish

Sara Santiso, Arantza Casillas, Alicia Pérez and Maite Oronoz

A Case Study on the Integration of Heterogeneous Data Sources in Public Health

Pierpaolo Vittorini, Anna Maria Angelone, Vincenza Cofini, Leila Fabiani, Antonella Mattei and Stefano Necozone

QSAR classification models for predicting affinity to blood or liver of volatile organic compounds in e-health

Fiorella Cravero, María Jimena Martínez, Mónica Díaz and Ignacio Ponzoni

“The Power of Precise Bioinformatical Prediction of miRNA:mRNA interaction:
miR-4699 as a potential osteogenic differentiation trigger”

Vahedeh Hosseini, Arash Khojasteh and Samira Mohammadi-Yeganeh

PLENARY LECTURE:

Prof. Jose Antonio Lorente

Director of Centre for Genomics and Oncological Research (GENYO). Professor of Legal and Forensic Medicine, University of Granada, Spain.

Session A.2: Bioinformatics for healthcare and diseases (Part I)

Chairman: Dr. Leon Bobrowski

Immune network technology on the basis of Random Forest algorithm for computer aided drug design

Galina Samigulina and Zarina Samigulina

Feature Selection in Multiple Linear Regression Problems with fewer Samples than Features

Paul Schmude

Predicting Comprehensive Drug-Drug Interactions for New Drugs via Triple Matrix Factorization

Jian-Yu Shi, Jiaxin Li, Hua Huang, Peng Lei, Yan-Ning Zhang and Siu-Ming Yiu

Diagnosis of auditory pathologies with Hidden Markov Models

Lilia Lazli

Revealing the relationship between human genome regions and pathological phenotypes through network analysis

Elena Rojano, Pedro Seoane Zonjic, Anibal Bueno Amorós, James Perkins and Juan Antonio García Ranea

A data- and model-driven analysis reveals the multi-omic landscape of aging

Elisabeth Yaneske and Claudio Angione

Session B.2: Data driven biology - new tools, techniques and resources

Chairman: Dr. Joshi Anagha

Transcription control in human cell types by systematic analysis of ChIP sequencing data from the ENCODE

Guillaume Devailly and Anagha Joshi

Finding Transcripts Associated with Prostate Cancer Gleason Stages Using Next Generation Sequencing and Machine Learning Techniques

Osama Hamzeh, Abed Alkhateeb, Iman Rezaeian, Aram Karkar and Luis Rueda

Big Data from Bionformatics perspective: A review

Francisco Gómez-Vela, Aurelio Lopez Fernandez, José Antonio Lagares Rodriguez, Domingo Savio Rodríguez Baena, Carlos D. Barranco, Miguel García Torres and Federico Divina

Computational prediction of inter-species relationships through omics data analysis and machine learning

Diogo Manuel Carvalho Leite, Aitana Neves, Grégory Resch, Yok-Ai Que, Xavier Brochet and Carlos-Andrés Peña-Reyes

Simultaneous gene selection and weighting in nearest neighbor classifier for gene expression data

Antonio Alarcón-Paredes, Gustavo Adolfo Alonso and Eduardo Cabrera

Session A.3: Advances in Computational Intelligence for Critical Care. Gamified rehabilitation for disabled people

Chairman: Dr. Alfredo Vellido, Dr. Vicent Ribas and Dr. Martina Eckert

Usage of VR Headsets for Rehabilitation Exergames

Martina Eckert, José Zarco, Juan Meneses and José Fernán Martínez

Health Monitoring System Based on Parallel-APPROX SVM

Fahmi Ben Rejab, Walid Ksiasa and Kaouther Ferchichi

Machine Learning for Critical Care: An Overview

Alfredo Vellido, Vicent Ribas, Carles Morales, Adolfo Ruiz Sanmartín and Juan Carlos Ruiz Rodríguez

Session B.3: Time lapse experiments and multivariate biostatistics

Chairman: Dr. Jan Urban

Towards integration of CFD and photosynthetic reaction kinetics in modeling of microalgae culture systems

Stepan Papacek, Jiri Jablonsky and Karel Petera

Automatic Multiparameter Acquisition in Aquaponics Systems

Antonin Barta, Pavel Soucek, Vladyslav Bozhynov and Pavla Urbanová

The Belousov-Zhabotinsky Reaction Stages Recognition by Information Entropy Calculation Approach: Implications to Cell Biology

Anna Zhyrova, Renata Rychtáriková and Dalibor Štys

Colometric Experiments on Aquatic Organisms

Jan Urban

Session A.4: Computational genomics

Chairman: Dr. Jean Fred Fontaine

Lost Strings in Genomes: What Sense Do They Do?

Michael Sadovsky, Jean Fred Fontaine, Yury Yakubailik, Natalia Rudenko and Miguel Andrade-Navarro

Comprehensive Study of Dispensable Regions in *Pseudomonas aeruginosa*

Dan Wang, Jingyu Li and Lusheng Wang

Breathogenomics: A Computational Architecture for Screening, Early Diagnosis and Genotyping of Lung Cancer

Emmanuel Adetiba, Marion Adebiji and Surendra Thakur

Pairwise and incremental multi-stage alignment of metagenomes: A new proposal

Esteban Pérez Wohlfeil, Óscar Torreño Tirado and Oswaldo Trelles

A HMRP-based association approach for germline susceptibility variants with copy-number alternation

Yu Geng, Zhongmeng Zhao, Daibin Cui, Tian Zheng, Xuanping Zhang, Xiao Xiao and Jiayin Wang

Session B.4: Biomedical signal analysis

Chairman: Dr. Elizabeth Shenkman

Degrees of Freedom in a Vocal Fold Inverse Problem

Pablo Gómez, Stefan Kniesburges, Anne Schützenberger, Christopher Bohr and Michael Döllinger

Classification algorithms for fetal QRS extraction in abdominal ECG signals

Pedro Álvarez, Francisco J. Romero, Antonio García, Luis Parrilla, Encarnación Castillo and Diego P. Morales

Association of body iron status with risk of type 2 diabetes mellitus in a Pakistani population

Mohammad Perwaiz Iqbal, Najmul Islam, Khalida Iqbal, Naseema Mehboobali, Ghulam Haider and Dania Ali

Session A5/B.5: Poster Session. (Part I)

Chairman: Dr. Olga Valenzuela, Dr. Fernando Rojas and D. Juan Manuel Gálvez

SNX16 regulates the intracellular traffic of intracellular α -synuclein into of microglia

Jun Liu

Kinase Activity Ranking (KAR) systematically identifies regulatory kinases in cancer signalling networks

Pedro Rodriguez Cutillas, Pedro Casado and Edmund Wilkes

Crohn's Disease Animal Model in Mini-Pig

Tae Hyun Ko, Azra Menon, Seok Ho Cha and Woon Kyu Lee

Molecular evolution of collagen gene family

Farhan Haq

ECG beats classification using Multi-Class Sparse Linear Classifiers

Lu Bing, Xiaolei Han and Wen Si

Face detection in gray scale images using Kernel method based locally linear embedding and Relevance Vector Machine

Lu Bing, Xiaolei Han and Wen Si

Evaluating covariance between nucleic acid sequencing datasets using functional canonical correlation analysis

Pedro Madrigal

The experimental setup for human circulation modeling

Valeriya Maryakhina and Arman Kostuganov

Transmissibility of norovirus: Results from mathematical modeling

Hiroshi Nishiura and Ryota Matsuyama

Explore the impact of ORAI1 mutation in altering the pore geometry of CRAC channel and ion permeation

Bhuvaneshwari Sampath

Epigenetic regulation model in AHNAK Deficient Adipose Differentiation

Soo Young Cho, Jong Kyu Woo, Seo Hyun Lee, Soojun Park, Je Kyung Seong and Young Seek Lee

Genome mining at Fundación MEDINA: decrypting the biosynthetic potential of promising strains

Marina Sánchez-Hidalgo, Daniel Oves-Costales, Javier Pascual, Ignacio González and Olga Genilloud

Investigation and Reduction of allergenicity from, great plant food allergen, Osmotin/thaumatin-like superfamily

Nassim Rahmani, Najaf Allahyari Fard, Bijan Bambaï, Zarrin Minuchehr, Esmaeil Ebrahimie and Ali Niazi

A Multi-Sensor Approach for Biomimetic Control of a Robotic Prosthetic Hand

Jeetinder Ghataurah, Diego Ferigo, Lukas-Karim Merhi, Brittany Pousett and Carlo Menon

Fluorescent strategy for sensing neurotransmitters based on low temperature co-fired ceramics modified with conducting polymers

Joanna Cabaj

Analysis of virome sequence universe of unknown origin in type 1 diabetic children through molecular similarity clustering

Jake Lin, Ondrej Cinek, Matti Nykter and Heikki Hyöty

Investigation of the Feasibility of Strain Gages as Pressure Sensors for Force Myography

Him Wai Ng, Xianta Jiang, Lukas-Karim Merhi and Carlo Menon

Clustering of aminoacids by different metrics on an 3D information-theoretical space

Moyocoyani Molina-Espíritu, Sheila López-Rosa, Rodolfo Esquivel and Jesús Dehesa

Study of the Chemical Space of Selected Bacteriostatic Sulfonamides from an Information Theory Point of View

Sheila López-Rosa, Moyocoyani Molina-Espíritu, Rodolfo Esquivel, Catalina Soriano-Correa and Jesús Dehesa

A novel disruptive treatment of heart failure; application of electric microcurrent straight to the myocardium

Johannes Mueller, Thomas Toellner, Thomas Giesel, Alexander Prehn, Karin Macfelda, Kersten Brandes and Peter Goettel

Bioimaging - Autothresholding and Segmentation via Neural Networks

Paola Urbanova, Jan Vanek, Pavel Soucek, Dalibor Stys, Petr Cisar and Milos Zelezny

Electron beam therapy: Microdosimetric Calculations for the quantification of the fundamental damaging processes

Marc Benjamin Hahn, Susan Meyer, Maria-Astrid Schroeter, Hans-Joerg Kunte, Tihomir Solomun and Heinz Sturm

Optimized Electrode layout and Compensation of Shape Change Artifacts in EIT for Emergency Medical Care

Seyedeh Bentolhoda Ayati

Protein Functional Families to characterise drug-target interactions.

Aurelio Moya Garcia

Maximal oxygen consumption and composite indices of femoral neck strength in a group of young women

Antonio Pinti

Multi-Fragment Melting Analysis System for Identification of Candida Species

Zülal Kesmen

Synergy of in vitro selection strategies and bioinformatic analysis in the identification of efficient anti-viral RNA-based drugs

Cristina Romero-López, Beatriz Berzal-Herranz, Susanna Manrubia, Carlos Briones and Alfredo Berzal-Herranz

Enhanced Ex Vivo Expansion of Human Hematopoietic Stem/Progenitor Cells by Direct Cell-Cell Contact with Mesenchymal Stem Cells and Mechanical Stimuli

Yun Gyeong Kang, Jee-Yeong Jeong and Jung-Woog Shin

Kinetic modelling of processes behind S2,3-states deactivation in photosynthetic oxygen evolution

Jiri Jablonsky and Stepan Papacek

A feasibility study of integrated clinical risk assessment in carotid artery disease based on a multilevel pipeline associating molecular and hemodynamic factors with plaque pathology.

Silvia Rocchiccioli, Antonis Sakellarios, Daniele Panetta, Claudia Fiorentini, Themis Exarchos, Matteo Azzarone, Michele Marconi, Mauro Ferrari, Dimitris Fotiadis, Oberdan Parodi and Gualtiero Pelosi

eHealth – Technological Advances and the Impact of Disruptive Forces on the Trajectory of the eHealth Landscape

Eric Addeo and Debbie Helman

Patients' Views and Beliefs On Usability And Usefulness Of An Health Self-Management App. EXPERTSALUD

Laura Fernandez Maldonado, Enric Pineda I Traid and Antoni Salvà Casanovas

Polynomial modeling of the electrocardiographic P-wave for its accurate detection and delineation

José Iván San José, José Joaquín Rieta and Raúl Alcaraz

The Method of Online Extra Heart Beats Detection based on Analytical Spectra Mutual Correlation

Viacheslav Antsiperov, Dmitry Rastyagaev and Vladimir Zernov

Diversity of Helicobacter pylori genome and Possible evolutionary origin of pathogenicity

Carlos Fernando Prada Quiroga, John Jairo Suarez Olaya and Alix Andrea Guevara Tique

Hands-free EEG-based Control of a Computer Interface based on Online Detection of Clenching of Jaw

Mahta Khoshnam, Eunice Kuatsjah, Xin Zhang and Carlo Menon

Application of a membrane protein structure prediction web service GPCRM to a gastric inhibitory polypeptide receptor model.

Ewelina Rutkowska, Przemyslaw Miszta, Krzysztof Mlynarczyk, Jakub Jakowiecki, Pawel Pasznik, Slawomir Filipek and Dorota Latek

An ensemble learning based automatic sleep apnea classification using a nasal pressure signal

Urtnasan Erdenebayar, Jong-Uk Park and Kyoung-Joung Lee

Insight into the Information-Theoretic Space of Biological and Pharmacological Molecules

Juan Carlos Angulo, Rodolfo Octavio Esquivel, Moyocoyani Molina-Espíritu, Sheila López-Rosa and Jesús S. Dehesa

Immuno-phylogenetic clustering of mutating viruses

Jacob Pitcovski, Itai Bloch, Noa Bachner-Hinenzon and Dana Goldenberg

Evaluation of basic Massive Parallel Sequencing parameters in relation to true/false positivity's findings of rare variants from isolated population with high incidence of Parkinsonism

Radek Vodicka, Radek Vrtel, Kristyna Kolarikova, Martin Prochazka, Katerina Mensikova and Petr Kanovsky

Use of eHealth for Disease Management and Patient Safety in Primary Care

Samuel N. Forjuoh, Judy Embry and Michael D. Reis

Observation of dynamics inside an unlabeled live cell using bright-field photon microscopy: Evaluation of organelles' trajectories

Renata Rychtarikova and Dalibor Stys

Information limits of optical microscopy: application to fluorescently labelled tissue section

Renata Rychtarikova, Georg Steiner, Michael B. Fischer and Dalibor Stys

Evaluation of in vivo and in vitro models of drug effects by comparison to literature-derived phenotype data

Katerina Taškova, Jean-Fred Fontaine and Miguel A. Andrade-Navarro

Data Mining Analysis of Current and Emerging Synergies Between Biomedical Engineering and Bioinformatics

Jean-Fred Fontaine and Miguel A. Andrade

Thursday, April 27, 2017

Session A.6: High-throughput bioinformatics tools for genomics

Chairman: Dr. Gonzalo Claros and Dr. Javier Perez

RNA sequencing analysis of neural cell lines: impact of normalization and technical replication

V. Bleu Knight and Elba E. Serrano

Towards a Universal Genomic Positioning System: Phylogenetics and Species Identification

Max Garzon and Sambriddhi Mainali

Building a high performance storage appliance for life sciences - A Case Study at Saudi Genome Project

Gaurav Kaul and Mohamed Abouelhoda

Obtaining the most accurate de novo transcriptomes for non-model organisms

Marina Espigares, Pedro Seoane, Rocío Bautista, Julia Quintana, Luis Gómez and M. Gonzalo Claros

Accelerating Smith-Waterman Alignment of Long DNA Sequence with OpenCL on FPGA

Enzo Rucci, Carlos Garcia Sanchez, Guillermo Botella, Armando De Giusti, R. Marcelo Naiouf and Manuel Prieto-Matias

Smith-Waterman Acceleration in Multi-GPUs: A Performance per Watt Analysis

Jesús Pérez-Serrano, Edans Flavius De Oliveira Sandes, Alba Cristina Magalhaes Alves de Melo and Manuel Ujaldon

Session B.6: Biomedicine and Biomedical Computing

Chairman: Dr. Carlos A. Peña-Reyes

Theoretical calculation of the exposure time to the Sun for the synthesis of vitamin D to Urcuquí, Ecuador

Graciela Salum, Javier García Molleja, Bruna Regalado Díaz, Lenin Guerrero León and Luisa Berrezueta

Scores of Intestinal Fibrosis from Wavelet-Based Magnetic Resonance Imaging Models

Ian Morilla, Magaly Zappa, Eric Ogier-Denis, Sabrina Doblas and Philippe Garteiser

Secret Life of Tiny Blood Vessels: Lactate, Scaffold and Beyond

Michael Sadowsky, Elena Khilazheva, Alla Salmina, Natalia Pisareva, Vladimir Salmin, Andrey Morgun, Elizaveta Boitsova and Pavel Larentiev

Increasing of Data Security and Workflow Optimization in Information and Management System for Laboratory

Pavel Blazek, Kamil Kuca, Jiri Krenek and Ondrej Krejcar

Fundamental Molecular Complexes of Photosynthesis and Their Biomedical Applications

Shyam Badu and Roderick Melnik

Tutorial C.1: Half-day GATB Tutorial. The Genome Analysis Toolbox with de-Bruijn graph.

Organizers: Dr. P.Durand, Dr. Lavenier, Dr.R.Chikhi and Dr.G.Rizk

PLENARY LECTURE:

Prof. Joaquin Dopazo

Fundacion Progreso y Salud, Clinical Bioinformatics Research Area, Sevilla, Spain

Session A.7: Bioinformatics for healthcare and diseases (Part II)

Chairman: D. Schmude Paul

Biclustering based on collinear patterns

Leon Bobrowski

RISK: a Random optimization Interactive System based on Kernel learning for predicting breast cancer disease progression

Fiorella Guadagni, Fabio Massimo Zanzotto, Noemi Scarpato, Alessandro Rullo, Silvia Riondino, Patrizia Ferroni and Mario Roselli

Variety behavior in the piece-wise linear model of the p53-regulatory module

Magdalena Ochab, Krzysztof Puszynski, Andrzej Swierniak and Jerzy Klamka

Data Mining Analysis of Current and Emerging Synergies Between Biomedical Engineering and Bioinformatics

Jean-Fred Fontaine and Miguel A. Andrade

Multi-omic data integration elucidates Synechococcus sp. PCC 7002 adaptation mechanisms to fluctuations in light intensity and salinity

Supreeta Vijayakumar and Claudio Angione

A Meta-Review of Feature Selection Techniques in the Context of Microarray Data
Zahra Mungloo-Dilmohamud, Yasmina Jaufeerally-Fakim and Carlos Pena

Session B.7: Biomedical image analysis

Chairman: Dr. Ignacio Rojas and Dr. Olga Valenzuela

Back Pain during Pregnancy and its Relationship to Anthropometric Biomechanical Parameters

Antonio Pinti

Microaneurysm candidate extraction methodology in retinal images for the integration into classification-based detection systems

Estefanía Cortés-Ancos, Manuel Emilio Gegúndez-Arias and Diego Marin

Superficial Dorsal Hand Vein Reconstruction

Ondrej Krejcar and Orcan Alpar

Automatic Removal of Mechanical Fixations from CT Imagery with Particle Swarm Optimisation

Mohammad Ryalat, Stephen Laycock and Mark Fisher

Augmented Visualization as Surgical Support in the Treatment of Tumors

Lucio Tommaso De Paolis

Salient networks: a novel application to study brain connectivity

Nicola Amoroso, Roberto Bellotti, Domenico Diacono, Marianna La Rocca and Sabina Tangaro

Session A.8: Challenges representing large-scale biological data

Chairman: Dr. André Santiago

What Can the Big Data Eco-System and Data Analytics do for E-Health? A Smooth Review Study.

Sidahmed Benabderrahmane

On the Ability to Reconstruct Ancestral Genomes from Mycobacterium Genus

Christophe Guyeux, Bashar Al-Nuaimi, Bassam Alkindy, Jean-François Couchot and Michel Salomon

Representativeness of a set of metabolic pathways

Jose F. Hidalgo, Jose A. Egea, Francisco Guil and Jose M. García

Session B.8: Oncological big data and new mathematical tools

Chairman: Dr. Gregorio Rubio and Dr. Rafael Villanueva

A Clinical Tool for Automated Flow Cytometry based on Machine Learning Methods

Mbusa Claude Takenga, Michael Dworzak, Markus Diem, Rolf-Dietrich Berndt, Erling Si, Michael Brandstoetter, Leonid Karawajew, Melanie Gau and Martin Kappel

Uncertainty quantification for meningococcus B carriers prediction

Luis Acedo, Clara Burgos, Juan-Carlos Cortés and Rafael Villanueva

A graph analysis of glycogen metabolism pathway
Gabriel Bosque, Jesús Picó and Gregorio Rubio

Session A.9: New advanced in Bioinformatics techniques

Chairman: Dr. Ignacio Ponzoni

A Deep Learning Network for Exploiting Positional Information in Nucleosome Related Sequences

Mattia Antonino Di Gangi, Salvatore Gaglio, Claudio La Bua, Giosue Lo Bosco and Riccardo Rizzo

Search of regions with periodicity using random position weight matrices in the genome of *C. elegans*

Eugene Korotkov and Maria Korotkova

Investigation of DNA sequences utilizing frequency-selective nanopore structures

Ali Hilal-Alnaqbi, Mahmoud Al Ahmad, Tahir A. Rizvi and Farah Mustafa

In Silico Prediction of 3D Structure of Anopheles Gambiae ABCC12 Protein

Marion Adebisi, Efejiro Ashano and Emmanuel Adetiba

MASS Studio: A Novel Software Utility to Simplify LC-MS Analyses of Large Sets of Samples for Metabolomics

Germán Martínez, Victor Gonzalez-Menendez, Jesus Martin, Fernando Reyes, Olga Genilloud and José R. Tormo

Session B.9: Biomedical Engineering. (Part I)

Chairman: Dr. Pierpaolo Vittorini

Feature Extraction Using Deep Learning for Food Type Recognition

Muhammad Farooq and Edward Sazonov

Modelling of glucose dynamics for diabetes

Tomas Koutny

Geometric modelling of the human cornea: a new approach for the study of corneal ectatic disease. A pilot investigation

Francisco Cavas, Daniel G. Fernández-Pacheco, Dolores Parras, Francisco J.F. Cañavate, Laurent Bataille and Jorge L. Alió

Virtual surgical planning for mandibular reconstruction: Improving the fibula bone flap

Dolores Parras, Benito Ramos, Juan José Haro, Manuel Acosta, Francisco Cavas, Francisco J.F. Cañavate and Daniel G. Fernández-Pacheco

Gremlin language for querying BiographDB integrated biological database

Antonino Fiannaca, Laura La Paglia, Massimo La Rosa, Antonio Messina, Riccardo Rizzo, Dario Stabile and Alfonso Urso

Session A10/B.10: Poster Session. (Part II)

Chairman: Dr. Fernando Rojas, D. Juan Manuel Gálvez and D. Daniel Castillo

Evaluation of the Streptavidin-Biotin Coupling Chemistry for Attachment of Oligonucleotides to Magnetic Nanoparticles

Teresa Zardán Gómez de La Torre and Maria Strømme

GIS-Aided Modelling of Two Siberian Reservation Sites

Michael Sadovsky and Marina Erunova

Elbow orthosis for tremor suppression – a torque based input case

Gil Herrnsstadt and Carlo Menon

Method for Fragile Site FRAXA Visualization and its Application for Fragile X Syndrome Diagnostics

Dmitry Yudkin, Natalya Lemskaya, Tuyana Bobokova, Ekaterina Galanina and Irina Kolesnikova

Development of Automatic Blood Pressure Device Based on Korotkoff Sounds

Xiong Li, Seung H. Lee and Jae J. Im

Monitoring of Breathing Sound using PVDF Film during Deep Sedation

Gayathri V.Panicker, Xiong Li, Seung H. Lee and Jae J. Im

Assembly of Gene Expression Networks based on a Breast Cancer Signature

Dimitris Chalepakis, Ekaterini Bei, Dimitrios Kafetzopoulos and Michalis Zervakis

Management of data structures generated during simulations of the evolution of multicellular systems

Andreea - Paula Robu, Mihaela Crisan-Vida, Nicolae Robu and Adrian Neagu

Pipeline design to identify key features in prognosis biomarker analysis using a real lung cancer dataset

María Gabriela Valdés Graterol, Xavier Rafael-Palou, Iván Galván-Femenía, Xavier Duran, Jun Yokota, Ricard Gavaldà, Rafael de Cid and Vicent Ribas Ripoll

Flexible Docking-Based Molecular Dynamics Simulation of Natural Product Compounds and Ebola Virus Nucleocapsid (EBOV NP): A Computational Approach to Discover New Drug for Combating Ebola

Mochammad Arfin Fardiansyah Nasution, Erwin Prasetya Toepak and Usman Sumo Friend Tambunan

Metabolomics Ultraviolet and Mass Spectrometry Imaging for the Deconvolution of Microbial Interactions

Victor Gonzalez-Menendez, Rachel Serrano, Francisca Muñoz, Jesus Martin, German Martinez, Olga Genilloud and Jose R Tormo

Quantization and Equalization of Pseudocolor Images in Hand Thermography

Ondrej Krejcar and Orcan Alpar

A multiple comparison framework for Synteny Block detection

Jose Antonio Arjona-Medina, Esteban Pérez Wohlfeil and Oswaldo Trelles

Estimation of Continuous Blood Pressure from Harmonic Phase-Shifts in Signals from Non-Invasive Photoplethysmographic Measurements

Fabian Kern, Thomas Greiner and Stefan Bernhard

- Feasibility Study to Classify Movement Using Force Myography with Cerebral Palsy Patients
Neha Chhatre and Carlo Menon
- A Novel Wearable for Rehabilitation Using Infrared Sensors: A Preliminary Investigation
Jordan Lui, Andrea Ferrone, Zhi Lim, Lorenzo Colace and Carlo Menon
- Nonlinear Control and Simulation of a Dielectric Elastomer Actuator-based Compression Bandage on Flexible Human Calf
Shahram Pourazadi, Carlo Menon and Mehrdad Moallem
- Effect of Flash Stimulation for Migraine Detection Using Decision Tree Classifiers
Aysha Ahmed and Abdulhamit Subasi
- ^{99m}Tc-Ceftizoxime: an infection-imaging agent for diabetic foot osteomyelitis.
Naseer Ahmed, Shazia Fatima, Adnan Saeed and Muhammad Zia
- Remote Patient Monitoring System Architecture for Diabetes Management
Barroon Isma'El Ahmad
- Splice variants microarray design pipeline
Leonid Solntsev, Oleg Utkin, Dmitriy Knyazev, Vera Tsvetkova, Elena Filatova and Nikolay Sakharnov
- Evolutionary History of a Plant Genus (*Paracaryum*) Using Several Packages in R
Mahboubeh Sherafati, Farideh Moharrek, Maryam Khoshokhan-Mozaffar and Shahrokh Kazempour-Osaloo
- Bioinformatic Characterization of Baculovirus Nuclear Localization Signals
Carolina Susana Cerrudo, Mariano Nicolás Belaich and Pablo Daniel Ghiringhelli
- Design of a Framework for the Evaluation of Interaction of Patterns in Genes Expressions
Marcos Levano and Andrea Albornoz
- Potential Role of Silymarin and Cysteine Against Hepatotoxicity Induced by Nickel in Albino (Wistar) Rats
Zine Kechrid and Samira Bouhalit
- Effect of curcumin analogues on the modulation of multiple targets of breast cancer stem cells
Anushree Tripathi, Manoj Kumar Shrivash and Krishna Misra
- Identification of line-specific strategies for improving carotenoid production in synthetic maize through data-driven mathematical modeling
Rui Alves, Ester Vilaprinco, Albert Sorribas, Teresa Capell and Paul Christou
- Parallelizing Partial Digest Problem on Multicores System
Hazem Bahig, Mostafa Abbas and M Mohie-Eldin
- The application of wearable technologies to improve healthcare in the world's poorest people
James Levine
- The urchin method for processing multivariate data in medical studies
Olivier Coubard

New heterologous antiapilic serum to treat a massive attack by Africanized honey bee (*Apis mellifera*) stings

Rui Seabra Ferreira Jr., Luis Eduardo Ribeiro Da Cunha, Ricardo Oliveira Orsi, Daniel Carvalho Pimenta, Alexandre Naime Barbosa, Lucilene Delazari Dos Santos and Benedito Barraviera

Probabilistic solution of a Reaction-Diffusion model of tumour invasion

Cristina Santamaría Navarro, María Belén García Mora, Juan Carlos Cortés López and David Martínez Rodríguez

Immediate Feedback Electronic System for Team Based Learning Practice in Biomedicine

Ana Paula Rodrigues de Andrade, Giuliana Reis Cardoso, Denise De Cássia Moreira Zornoff and Ana Silvia Sartori Barraviera Seabra Ferreira

Game for Teaching Blood Pressure Regulation Process

Ana Paula Rodrigues de Andrade, Juliana Irani Fratucci De Gobbi, Denise De Cássia Moreira Zornoff and Ana Silvia Sartori Barraviera Seabra Ferreira

Clustering of Food Intake Images into Food and Non-Food Categories

Abul Doulah and Edward Sazonov

Estimation of Cortical Source Location and Signal Waveform with Uncertain EEG Leadfield Matrix

Rabiya Momin, Hasan Mir and Hasan Al-Nashash

Evaluation of algorithms for automatic classification of heart sound signals

Ricardo Enrique Pérez Guzmán, Rodolfo Valentín García Bermúdez, Fernando Rojas Ruiz, Ariel Céspedes Pérez and Yudelquis Ojeda Riquenes

Automatic glissade determination through a mathematical model in electrooculographic records

Camilo Velázquez-Rodríguez, Rodolfo García-Bermúdez, Fernando Rojas-Ruiz, Roberto Becerra-García and Luis Velázquez

Mobile Health System for Evaluation of Breast Cancer Patients During Treatment and Recovery Phases

Joaquín Ollero, Jose Antonio Moral-Munoz, Ignacio Rojas and Oresti Banos

Evaluation of the differentiation of noisy electrooculographic records using continuous wavelet transform

Rodolfo García-Bermúdez, Fernando Rojas, Gabriel Demera, Christian Torres, David Zambrano, Gonzalo Joya and Roberto Antonio Becerra García

Effect of Crowding Stress on the Skin Proteome of Lumpfish, *Cyclopterus Lumpus*

Deepti. M. Patel, Martin. H. Iversen and Monica. F. Brinchmann

Medical Planning: Operating theatre Design and its impact on cost, area and workflow

Khaled Sayed

Analysis of laccase diversity within the genus *Rhodococcus* using bioinformatics tools

Maria Kuyukina, Alexander Konev and Irena Ivshina

Development of intelligent systems for the classification and automatic diagnosis of fluoroscopy images corresponding to different skin pathologies

Olga Valenzuela, Daniel Castillo, Juan Manuel Galvez, Ignacio Rojas

Computational based Characterization and Development of miRNA-SSRs in
Arabidopsis thaliana

Anuj Kumar, Aditi Chauhan, Sai Kumar Kompelli, Vijay Gahlaut, Krishna Pal Singh, Mnv Prasad Gajula, Prashanth Suravajhala, Harindra Singh Balyan and Pushpendra Kumar Gupta

Friday April 28, 2017

**Session A.11: Computational systems for modelling biological processes
(Part I)**

Chairman: Dr. Michael Sadovsky

Cyber immunity: A bioinspired cyber defense system

Peter Wlodarczak

An accurate database of the fixation probabilities for all undirected graphs of order 10 or less

Fernando Alcalde Cuesta, Pablo González Sequeiros, Álvaro Lozano Rojo and Rubén Vígara Benito

Analysis of Soil Data from Eastern of Morocco based on Data Mining Process

Imane Belabed, Mohammed Talibi Alaoui, Abdelmajid Belabed, Youssef Talibi Alaoui, Mamie Matoir and Naoual Bouziani

A Multi-Objective Optimization Framework for Multiple Sequence Alignment with Metaheuristics

Cristian Zambrano-Vega, Antonio J. Nebro, José García-Nieto and Jose F. Aldana Montes

Analysis of Gene Expression Discretization Techniques in Microarray Biclustering

Julieta Dussaut, Cristian Gallo, Jessica Carballido and Ignacio Ponzoni

Analysis of Informative Features for Negative Selection in Protein Function Prediction

Marco Frasca, Dario Malchiodi and Fabio Lipreri

Session B.11: Smart Sensor and Sensor-Network Architectures

Chairman: Dr. Natividad Martínez, Dr. Juan Antonio Ortega and Dr. Ralf Seepold

Real Time Localization using Bluetooth Low Energy

Massimo Conti

A sensor grid for pressure and movement detection supporting sleep phase analysis

Maksym Gaiduk, Ina Kuhn, Ralf Seepold, Juan Antonio Ortega and Natividad Martinez Madrid

A Portable Wireless sEMG and Inertial Acquisition System for Human Activity Monitoring

Giorgio Biagetti, Paolo Crippa, Laura Falaschetti, Simone Orcioni and Claudio Turchetti

An automatic and intelligent system for integrated healthcare processes management

Virginia Cid De La Paz Furest, Andrés Jiménez Ramírez and M.J. Escalona

A Microcontroller Based System for Controlling Patient Respiratory Guidelines

Leticia Morales, Manuel Jesús Domínguez and Andrés Jiménez

Requirements analysis for user interfaces in mobile eHealth applications

Armando Statti and Natividad Martínez Madrid

Key factors for innovative developments on Health Sensor-Based System

Maria Dolores Pelaez, Miguel Lopez Medina, Macarena Espinilla Estévez and Javier Medina Quero

CLOSING PLENARY LECTURE:

Prof. Roderic Guigo

Coordinator of Bioinformatics and Genomics at Centre de Regulacio Genomica (CRG).

Head of the Computational Biology of RNA Processing Group.
Universitat Pompeu Fabra, Barcelona (SPAIN)

Session A.12: Computational systems for modelling biological processes (Part II)

Chairman: Dr. Dario Malchiodi

Evaluation of in vivo and in vitro models of drug effects by comparison to literature-derived phenotype data

Katerina Taškova, Jean-Fred Fontaine and Miguel A. Andrade-Navarro

Differential Network Analysis of Anti-sense Regulation

Marc Legeay, Beatrice Duval and Jean-Pierre Renou

L1-regularization model enriched with biological knowledge

Daniel Urda, Francisco Aragon, Leonardo Franco, Francisco Veredas and Jose M. Jerez

Dengue Agent-Based Model in South American Temperate Zone

Carlos Alejandro Pais, Maximiliano Gabriel Colazo and Maximiliano Fernandez

A Bio-inspired Algorithm for the Quantitative Analysis of Hind Limb Locomotion Kinematics of Laboratory Rats

Josué González-Sandoval, S. Ivvan Valdez-Peña, Sergio Dueñas-Jimenez and Eduardo Gerardo Mendizabal Ruiz

Machine Learning Approaches for Predicting High Utilizers in Health Care

Chengliang Yang, Chris Delcher, Elizabeth Shenkman and Sanjay Ranka

Mixed-Integer Programming Model for Profiling Disease Biomarkers from Gene Expression Studies

Andre M. Santiago, Miguel Rocha, António Dourado and Joel Arrais

Session B.12: Biomedical Engineering. (Part II)

Chairman: Dr.Fernando De la Prieta Pintado

A platform for Supporting Self Diagnosis of Tinnitus

Pablo Chamoso, Fernando De La Prieta, Alberto Eibenstein, Daniel Santos Santos, Angelo Tizio and Pierpaolo Vittorini

Sequential Density-Based Multi-Subject Clustering in Massive Tractography Dataset

Amira Chekir and Fatima Oulebsir-Boumghar

High definition method for imaging bacteria in microconfined environments on solid media

César Augusto Hernández Espitia, Natalia Lopez-Barbosa, Christian Segura and Johann F. Osma

Gamification in Mobile Blood Donation Applications

Lamyae Sardi, Ali Idri and José Luis Fernández-Alemán

Adsorption of Bilirubin Toxins by Chitosan Coated Activated Carbon Prepared from Date Pits

Asel Mwafy, Ameereh Seyedzadeh, Waleed K Ahmed, Basel Alsayyed, Betty Mathew, Kamala Pandurangan, Abdel-Hamid I Mourad and Ali Hilal-Alnaqbi

An Impact of Severe Preeclampsia on Cardiovascular System Adaptation of Newborns in Early Neonatal Period

Michael Sadovsky, Alla Salmina, Eugene Bushmelev, Elena Emelianchik and Olga Kireeva

Assessment of Safety Issues in MRI Monitoring of Patients with Metallic Implant

Gulsen Akdogan and O. Burak Istanbulu

Session: Virtual Presentation Session

Chairman: Dr.Ignacio Rojas

H-RACER: Hybrid RACER to Correct Substitution, Insertion, and Deletion Errors

Salma Gomaa, Nahla Belal and Yasser El-Sonbaty

Quantum Computing Based Inference of Gene Regulatory Networks

Abhinandan Khan, Goutam Saha and Rajat Pal

Exploring Symmetric Substructures in Protein Interaction Networks for Pairwise Alignment

Ahed Elmsallati, Swarup Roy and Jugal Kalita

Wavelet Decomposition Based Automatic Sleep Stage Classification Using EEG

Nieves Crasto and Richa Upadhyay

Prognostic Modeling and Analysis of Tumor Response to Fractionated Radiotherapy
for Patients with Squamous Cell Lung Cancer

Hualiang Zhong, Hoda Sharifi, Haisen Li, Weihua Mao and Indrin J. Chetty

Uropathogenic Escherichia coli: An ideal resource for DNA microarray probe designing

Payam Behzadi and Elham Behzadi

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