IWBBIO 2015
INTERNATIONAL WORK-CONFERENCE ON
BIOINFORMATICS AND
BIOMEDICAL ENGINEERING

PROGRAM

15-17 April, 2015
Granada (SPAIN)
# IWBBIO 2015 Short Program

## Wednesday, April 15, 2015

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<td>8:30-10:00</td>
<td>Session A.1: &quot;Computational Genomics&quot;</td>
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<td>Session B.1: &quot;Computational Methods for Biomedical Image Analysis&quot;</td>
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<td>Session A.2: &quot;SS12: Advances in Drug Discovery&quot;</td>
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<td>Session B.4: &quot;SS7 Part II: Interdisciplinary puzzles of measurements in biological systems&quot;</td>
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<td>15:00-16:00</td>
<td>Session A.5/B.5: Poster Session I</td>
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<td>16:00-17:00</td>
<td>Session A.6: &quot;SS4: Advances in Computational Intelligence for Bioinformatics and Biomedicine&quot;</td>
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<td>Session A.7: &quot;SS5: Tools for Next Generation Sequencing data analysis&quot;</td>
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## Thursday, April 16, 2015

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<th>Time</th>
<th>Session A.8: &quot;Bioinformatic Applications in Genomics&quot;</th>
<th>Session B.8: &quot;Applications of e-Health for diseases&quot;</th>
<th>Session A.9: &quot;Computational Applications in Next Generation Sequencing&quot;</th>
<th>Session B.9: &quot;SS14: Ambient Intelligence for Bioemotional Computing&quot;</th>
<th>Session A.10/B.10: Poster Session II</th>
<th>20:00 Gala Dinner at Hotel Alhambra Palace</th>
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<td>8:30-9:30</td>
<td>&quot;SS1: Expanding Concept of Chaperone Therapy for Inherited Brain Disease&quot;</td>
<td>&quot;SS10: Towards an effective telemedicine: an interdisciplinary approach&quot;</td>
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<td>COFFEE BREAK</td>
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<td>11:00-12:30</td>
<td>Session A.13: &quot;SS11-Part II: High Performance Computing in Bioinformatics, Computational Biology and Computational Chemistry&quot;</td>
<td>Session B.13: &quot;Computational systems for modelling biological and biomedical processes&quot;</td>
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<td>12:30-13:30</td>
<td>CLOSING PLENARY LECTURE: Prof. Patrick Aloy</td>
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<td>15:00-16:00</td>
<td>Session A.14: &quot;Biological Sequence Analysis and Alignments&quot;</td>
<td>Session B.14: &quot;Computational Methods for Biomedical Signal Analysis&quot;</td>
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<td>16:30</td>
<td>Visit to the Alhambra</td>
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**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.
- The **Plenary Lectures** will be held at Aula Magna, Facultad de Ciencias.
IWBBIO 2015 FULL PROGRAM

Wednesday, April 15, 2015

Session A.1: "Computational Genomics"

**Chairman (tentative): Dr. Jean-Fred Fontaine**

Improved Core Genes Prediction for Constructing well-supported Phylogenetic Trees in large sets of Plant Species  
*Bassam Alkindy, Huda Al-Nayyef, Christophe Guyeux, Jean-Francois Couchot, Michel Salomon and Jacques Bahi*

A Computational Method for the Rate Estimation of Evolutionary Transpositions  
*Nikita Alexeev, Rustem Aidagulov and Max Alekseyev*

A unified integer programming model for genome rearrangement problems  
*Giuseppe Lancia, Franca Rinaldi and Paolo Serafini*

MicroRNA Target Prediction Based upon Metastable RNA Secondary Structures  
*Ouala Abdelhadi Ep Souki, Luke Day, Andreas A. Albrecht and Kathleen Steinhofel*

Strong Inhomogeneity in Triplet Distribution Alongside a Genome  
*Michael Sadovsky and Xenia Nikititna*

Genome Structure of Organelles Strongly Relates to Taxonomy of Bearers  
*Michael Sadovsky, Anna Chernyshova, Julia Putinzeva and Vaselina Fedotova*

Session B.1: "Computational Methods for Biomedical Image Analysis"

**Chairman (tentative): Lucio De Paolis**

Accurate Microscopic Blood Cell Image Enhancement and Segmentation  
*Syed Hamad Shirazi Hamad Shirazi and Imran Razzak*

Analysis of Inter-Rater Reliability of the Evaluation of Radiologists Assessment After Image Processing  
*Kemal Turhan, Burçin Kurt, Sibel Kul and Asli Yazagan*

A 3D Voxel Neighborhood Classification Approach within a Multiparametric MRI Classifier for Prostate Cancer Detection  
*Francesco Rossi, Alessandro Savino, Valentina Giannini, Anna Vignati, Simone Mazzetti, Alfredo Benso, Stefano Di Carlo, Gianfranco Politano and Daniele Regge*

Fast Localized Active Contours for left ventricle segmentation in cardiac MRI  
*Derraz Foued, Pinti Antonio and Miloud Bousaha*

Transcatheter Heterotopic Tricuspid Valves Flow Performances measured by 2D and 3D Particle Image Velocimetry  
*Munirah Ismail, Hwa Liang Leo, Edgar Tay and Foad Kabinejadian*
Session A.2: "SS12: Advances in Drug Discovery"

**Chairmen: Dr. Horacio Pérez-Sánchez**

Improving activity prediction of Adenosine A2B receptor antagonists by machine learning methods

*Fahimeh Ghasemi, Alireza Mehri, Jorge Peña-García, Alfonso Pérez-Garrido, Afshin Fassihi and Horacio Pérez-Sánchez*

nBioChip (nano-Biofilm Chip)- A new technology platform for nano-scale microbial culture with applications in high-throughput drug discovery of antimicrobial drugs and diagnostics

*Anand Srinivasan, Anand Ramasubramanian and Jose Lopez-Ribot*

DIA-DB: a web-accessible database for the prediction of diabetes drugs

*Antonia Sánchez-Pérez, Andrés Muñoz, Jorge Peña-García, Nick Bekas, Antigoni Katsikoudi, Andreas G. Tzakos and Horacio Pérez-Sánchez*

Molecular docking and Biological evaluation of functionalized benz[ghi]quinolines as Colon cancer agents

*Ramendra Pratap, Dharmendra Kumar Yadav, Surjeet Singh, Reeta Rai, Naresh Kumar, Han-Sup Uhm, Harpreet Singh and Horacio Pérez-Sánchez*

Predicting cross-reactivity from computational studies for pre-evaluation of specific hepatic glycogen phosphorylase inhibitors

*V Badireenath Konkimalla*

Transport Properties of RNA Nanotubes using Molecular Dynamics Simulation

*Shyam Badu, Roderick Melnik and Sanjay Prabhakar*

Session B.2: "SS2: Quantitative and Systems Pharmacology - Thinking in a wider "systems-level" context accelerates drug discovery and enlightens our understanding of drug action"

**Chairman: Violeta Pérez Nueno**

GESSE: Side Effects Prediction from GES Ligand-Target Relationships

*Violeta Isabel Perez Nueno*

Successes and Pitfalls in Scoring Molecular Interactions

*Heloisa Muniz and Alessandro Nascimento*

The use of Random Forest to predict binding affinity in docking

*Hongjian Li, Kwong-Sak Leung, Man-Hon Wong and Pedro Ballester*

Structural determinants in the binding of BB2 receptor ligands: in silico and spectroscopic studies on PD176252 analogues

*Antonio Carrieri, Danilo Belviso, Rocco Caliandro, Enza Lacivita, Mauro Nisio, Piero Mastrorilli, Vito Gallo and Marcello Leopoldo*

An integrated computational framework that predicts potential combinatorial targets for personalized cancer treatment

*Tapesh Santra, Melinda Halasz and Walter Kolch*
Nucleic Acid-Drug Interactions: An Electrochemical Approach  
Dominika Janiszek, Monika Karpinska, Andrzej Niewiadomy, Agnieszka Girstun,  
Hanna Elzanowska, Magdalena Maj-Zarawska and Pawel Kulesza

OPENING PLENARY LECTURE:  
Prof. Xavier Estivill  
Genomics and Disease group  
Centre for Genomic Regulation (CRG)  
Barcelona (SPAIN)

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Session A.3: “Computational Proteomics”

Chairman (tentative): Dr. Salvador Ventura

Skin mucus proteome map of European sea bass (Dicentrachus labrax): a non-invasive technique for the search of immune biomarkers  
Hector Cordero, Monica Brinchmann, Alberto Cuesta, Jose Meseguer and Maria Angeles Esteban

A pseudo de Bruijn graph representation for discretization orders for distance geometry  
Antonio Mucherino

Prediction of Functional Types of Ligands for G Protein-Coupled Receptors with Dynamically Discriminable States Embedded in Low Dimension  
Yu-Hsuan Chen and Jung-Hsin Lin

P3D-SQL: Extending Oracle PL/SQL Capabilities Towards 3D Protein Structure Similarity Searching  
Dariusz Mrozek and Bozena Malysiak-Mrozek

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Session B.3: “SS7 Part I: Interdisciplinary puzzles of measurements in biological systems”

Chairman: Dr. Jan Urban

Measurement in biological systems from the self - or-ganisation point of view  
Dalibor Stys, Jan Urban and Petr Cisar

High-resolution 3D reconstruction of organelles from bright-field transmission microscopic images  
Renata Rychtarikova, Tomas Nahlik and Dalibor Stys

FRAP & FLIP: Two sides of the same coin?  
Stepan Papacek, Jiri Jablonsky, Ctirad Matonoha, Radek Kana and Stefan Kindermann
Noise and baseline filtration in mass spectrometry
Jan Urban

Session A.4: "SS8: Biological Networks: Insight from interactions"

Chairman: Drs. Alfredo Benso and Prashanth Suravajhala

Deciphering the genetic architecture of Type 2 Diabetes through SNP-SNP interaction
Asima Zia, Attya Bhatti, Amjad Ali and Peter John

Inference of Circadian Regulatory Pathways based on Delay Differential Equations
Catherine Higham and Dirk Husmeier

Gene Expression vs Network Attractors
Gianfranco Politano, Alessandro Vasciaveo and Alessandro Savino

Session B.4: "SS7 Part II: Interdisciplinary puzzles of measurements in biological systems"

Chairman: Dr. Jan Urban

Mixture model based efficient method for magnetic resonance spectra quantification
Franciszek Binczyk, Michal Marczyk and Joanna Polanska

Standardization of experimental protocols and data management process
Petr Číasar, Dalibor Styš, Stepán Papácek and Jan Urban

BioWES: Scientific data management solution.
Dmytro Soloviov, Petr Číasar and Dalibor Styš

BioWes - from design of experiment, through protocol to repository: control, standardization, and back-tracking.
Antonin Barta, Petr Číasar and Dmytro Soloviov

Session A.5/B.5: Poster Session I

Pseudoknots Prediction on RNA Secondary Structure using Term rewriting
Linkon Chowdhury and Mohammad Ibrahim Khan

A Segmentation-Free Model for Heart Sound Feature Extraction
Haiyang Wang, Guangpei Li and Mingchui Dong

IMPACT OF HEALTH APPS IN HEALTH AND COMPUTER SCIENCE PUBLICATIONS. A SYSTEMATIC REVIEW FROM 2010 TO THE PRESENT DAY

A Hyperanalytic Wavelet Based Denoising Technique for Ultrasound Images
Cristina Stolojescu-Crisan

From Single Fibre Action Potential to Surface Electromyographic Signal: A Simulation Study
Messaoudi Noureddine and Bekka Rais El’Hadi
Master Clock in Schizophrenic Subjects with VIPR2 Duplication  
  Jesus Miro-Bueno and Anil K. Seth

A flexible denormalization technique for data analysis above a deeply-structured relational database: biomedical applications  
  Stanislav Stefanic and Matej Lexa

PloidyQuantX: a quantitative microscopy imaging tool for telomere mapping at cell and organ level  
  Xavier Sevillano, Marc Ferrer, Mary-Paz González-García, Irina Pavelescu and Ana I. Caño-Delgado

Automated extraction of food intake indicators from continuous meal weight measurements  
  Vasileios Papapanagiotou, Christos Diou, Billy Langlet, Ioannis Ioakimidis and Anastasios Delopoulos

System Development Ontology to Discover Lifestyle Patterns Associated with NCD  
  María Somodevilla-García, María De La Concepción Perez De Celis Herrero and Dr Ivo H. Pineda Torres

Local Search for Multiobjective Multiple Sequence Alignment  
  Maryam Abbasi, Luis Paquete and Francisco B. Pereira

Awareness, perception and usage of mobile applications for health and wellness  
  Diogo Calçada and Henrique M G Martins

Health Technology Assessment Models Utilized in the Chronic Care Management  
  Ondrej Gajdos, Ivana Juricková and Radka Otawová

Using Entropy Cluster-based Clustering for finding potential Protein Complexes  
  Viet-Hoang Le and Sung-Ryul Kim

Modelling the hippocampus in MRI using the alpha-stable distribution  
  Diego Salas-Gonzalez, Elmar W. Lang, Juan M. Górriz and Javier Ramírez

Prediction of human gene - phenotype associations by exploiting the hierarchical structure of the Human Phenotype Ontology  
  Giorgio Valentini, Sebastian Kohler, Matteo Re, Marco Notaro and Peter Robinson

Using multivariate analysis and bioinformatic tools to elucidate the functions of a cyanobacterial global regulator from RNA-Seq data obtained in different genetic and environmental backgrounds  
  Jose I. Labella, Francisco Rodríguez-Mateo, Javier Espinosa and Asunciön Contreras

THE HYPERCHOLESTEROLEMIC SWINE TO STUDY EXPERIMENTAL ATHEROGENESIS: STATISTICAL-MODEL BASED ASSOCIATIONS BETWEEN MOLECULAR FACTORS AND PLAQUE MORPHOLOGY  
  Silvia Rocchiccioli

IVUS/micro-CT/histomorphometry integrated model for coronary profiling of plaque formation/progression: a proof of concept experimental study.  
  Gualtiero Pelosi
Fabrication of Wrinkle Surfaces on Bio-Polymeric Substrates by Using Ion Implantation  
Taejin Kang

QT interval measurement using Empirical Mode Decomposition  
Hady Slimane Zine-Eddine

Bioinformatics and Molecular Studies the three Glyceraldehyde-3-Phosphate Dehydrogenase (GAPDHs) of Pseudomonas Syringae pv tomato DC3000  
Bouchra El Khalfi, Aurelio Serrano and Abdelaziz Soukri

A genome browser for visualization and analysis of alternative polyadenylation  
Yumin Zhang, Chuang Zhao and Xiaohui Wu

Molecular Modeling study of alkaloid from roots of Toddalia Asiatica as inhibitors of HIV1 Reverse Transcriptase: A Molecular Modeling Approach  
Asif Naqvi, Mayank Sharma, Aditi Mathur, Bharti Sisodia, Rashmi Pareek, Shabnam Saroj, Deeksha Gupta, Abhinav Rathi and Sonam Mishra

Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) an extracellular infection-induced Protein of the phytopathogenic proteobacterium Pseudomonas syringae pv tomato DC3000  
Bouchra El Khalfi, Aurelio Serrano and Abdelaziz Soukri

Structure-Based Virtual screening of LuxT Quorum Sensing inhibitors against pathogenic Vibrio alginolyticus  
Sasikala Dakshinamurthy

Molecular Insights of active site surface based screening in identifying potent inhibitors against the HCV-PR through Structural Mapping and Molecular Dynamics Simulation  
Chandrabose Selvaraj

Application of Dempster-Schaffer Method in Family-Based Association Studies  
Farid Rajabli, Unal Goktas and Gul Inal

NEW ALGORITHM FOR ASSESSMENT OF FREQUENCY DURATION OF MURMURS USING HILBERT-HUANG TRANSFORM  
Omari Tahar and Bereksi-Reguig Fethi

USSD technology a low cost asset in complementing Public Health Workers’ work processes  
Munyaradzi Zhou, Marlien Herselman and Alfred Coleman

Inhibition of Ebola Virus by Potent anti-Ebola miRNAs in silico  
Prof. Omar Bagasra, Zhabiz Golkar and Roshan Battaria

COMPARISON OF THE CYTOTOXIC EFFECTS OF RG108 (A DNA METHYLTRANSFERASE INHIBITOR) ALONE AND COMBINATION WITH NERVE GROWTH FACTOR ON PC-12 Adh CELLS  
Selin Engur, Elif Kaya, Miris Dikmen and Yusuf Ozturk

A DNA METHYLTRANSFERASE INHIBITOR RG108 POTENTIATES NGF-INDUCED NEURITE OUTGROWTH OF PC-12 Adh CELLS  
Elif Kaya, Selin Engur and Miris Dikmen
Capturing the mechanism of action of antipsychotic drugs at G protein-coupled receptors (GPCRs) by means of Markov State Model analysis

Ismael Rodriguez-Espeigares, Nuria Plattner, Juan Manuel Ramirez-Anguita, Frank Noe, Ferran Sanz-Carreras and Jana Selent

GESSE: Side Effects Prediction from GES Ligand-Target Relationships

Violeta Isabel Perez Nuñez

The Time and Location Patterns of In-Hospital Mortality According to the Admitted Department

In-Cheol Kim, Yoon-Nyun Kim, Hyoung-Seob Park, Chang-Wook Nam, Seong-Wook Han, Seung-Ho Hur and Ju-Young Kim

Effects of Circadian Rhythm on Hospital Death Pattern Difference Between Cancer and Cardiovascular Disease

In-Cheol Kim, Yoon-Nyun Kim, Hyoung-Seob Park, Seong-Wook Han, Chang-Wook Nam and Seung-Ho Hur

Cytokine Levels in Patients with Atopic Eczema

Linda Krause, Vagkan Mourantchanian, Kilian Eyerich, Bettina Knapp, Fabian Theis and Stefanie Eyerich
Session A.6: "SS4: Advances in Computational Intelligence for Bioinformatics and Biomedicine"

**Chairman:** Dr. Alfredo Vellido

A Weighted Cramers V Index for the Assessment of Stability in the Fuzzy Clustering of Class C G Protein-Coupled Receptors

*Alfredo Vellido, Christiana Halka and Angela Nebot*

Multigenetic risk quantification for SNP array based direct-to-consumer genomic services

*Svetlana Bojic and Stefan Mandic-Rajcevic*

MicroOn and MicroOndb: A software suite and a database for prediction and validation of miRs involved in cancer

*Sumit Biswas and Ram Kothandan*

Computational inference in systems biology

*Benn Macdonald and Dirk Husmeier*

A Price we Pay for Inexact Dimensionality Reduction

*Sarunas Raudys, Vytautas Valaitis, Zidrina Pabarskaite and Gene Biziuleviciene*

Finding unknown nodes in phylogenetic graphs

*Luis Evaristo Caraballo, José-Miguel Díaz-Báñez and Edel Pérez-Castillo*

Session B.6: "Bioengineering and Bioinformatics for healthcare and diseases"

**Chairman:** Dr. Jose Luis Oliveira

Parametric study of ventricular catheters for hydrocephalus

*Ángel Giménez, Marcelo Galarza, Olga Pellicer, José Valero and José M. Amigó*

Artificial Neural Networks in Acute Coronary Syndrome Screening

*M. Rosário Martins, Teresa Mendes, José Grañeda, Rodrigo Gusmo, Henrique Vicente and José Neves*

Multilayer clustering: Biomarker driven segmentation of Alzheimer’s disease patient population

*Dragan Gamberger, Bernard Zenko, Alexis Mitelpunkt and Nada Lavrac*

Mortality Prediction with Lactate and Lactate Dehydrogenase

*Yasemin Zeynep Avci, Kemal Turhan, Asli Yazagan and Asim Orem*

Building Bayesian Networks with Statistical Inference to Model Temporal Order and Dependencies of Somatic Mutations

*Ugur Toprak, Serbulent Unsal and Kemal Turhan*

Predicting human protein substrates for Toxoplasma gondii rhoptry kinases through multiple tests of spectral alignment

*Gladys Salcedo, Ailan Arenas and Andrey Montoya*
Session A.7: "SS5: Tools for Next Generation Sequencing data analysis"

Chairman: Drs. M. Gonzalo Claros and Javier P. Florido

Integrated variable selection from multi-omics experiments using machine learning
Sonia Tarazona, Mónica Clemente-Císcar and Ana Conesa

DEgenes Hunter - A self-customised gene expression analysis workflow for non-model organisms
Isabel González Gayte, Rocío Bautista Moreno and M. Gonzalo Claros

Bioinformatics Analyses to Separate Highly Divergent mRNAs from Unknown Sequences in de novo Assembled Transcriptomes
David Velasco, Pedro Seoane and M. Gonzalo Claros

The FDA’s experience with emerging genomics technologies - past, present and future
Weida Tong

ngsCAT: an easy-to-use tool to assess the efficiency of targeted enrichment sequencing
Javier P. Florido, Francisco Javier López-Domingo, Antonio Rueda, Joaquin Dopazo and Javier Santoyo-López

Evaluation of combined genome assemblies: a case study with fungal genomes
Mostafa Abbas, Ponnuraman Balakrishnan and Qutaibah Malluhi

Session B.7: "e-Health"

Chairman: Dr. Oresti Baos

A Semantic Layer for Unifying and Exploring Biomedical Document Curation Results
Pedro Sernadela, Pedro Lopes, David Campos, Sérgio Matos and José Luis Oliveira

e-Health Informed Foreign Patient and Physician Communication: The Perspective of Informed Consent
Echo Huang, Shao-Fu Liao and Shing-Lung Chen

Empirical Analysis of the Effect of eHealth on Medical Expenditures of Patients with Chronic Diseases
Masatsugu Tsuji and Yusuke Kinai

A LOD-based service for extracting Linked Open Emergency Healthcare Data
Mikaela Poulymenopoulou, Flora Malamateniou and George Vassilacopoulos

Data Reduction for Medical Education Program Evaluation Questionnaire
Kemal Turhan, Burçin Kurt, Aslı Yazagan, Ügür Toprak and Program Evaluation Working Group

The Medical Information System - The Perspective Tool for Realization of Quality Assurance Programs
Ekaterina Kldiashvili
PLENARY LECTURE:
Prof. Alfonso Valencia
Structural Computational Biology group
Spanish National Cancer Research Center (CNIO)
Madrid (SPAIN)

Session A.8: "Bioinformatic Applications in Genomics"

Chairman: Dr. Michael Sadovsky

Integrative bioinformatic analyses of gene and miRNA expression genome-wide profiles from hippocampus of Alzheimer's disease patients
Francisco Jose Campos-Laborie, Sara Aibar, Rosana Chehin, Rita Raisman-Vozari, Dulce Papy-Garcia and Javier De Las Rivas

Novel associations of closely related disorders with phenotypes, genes or chemicals using text and data mining
Carol Perez-Iratxeta, Josef Priller, Eike Spruth, Miguel A. Andrade-Navarro and Jean-Fred Fontaine

Applications of Proteochemometrics to Cancer Cell Line Sensitivity Modelling.
Isidro Cortes-Ciriano, Gerard J.P. van Westen, Bowier Guillaume, Michael Nilges, John P Overington, Andreas Bender and Therese E Malliavin

Pharmacological deacetylation by HDAC inhibition
Assam El-Osta

Session B.8: "Applications of e-Health for diseases"

Chairman (tentative): Dr. Ekaterina Kldiashvili

Development of a High Fundamental Frequency (HFF) Piezoelectric Immunosensor for early and sensitive detection of tuberculosis
Angel Montoya, Carmen March, Yeison J. Montagut, María J. Moreno, Juan J. Manchís, Antonio Arnau, Yolanda Jiménez, Marisol Jaramillo, Paula A. Marín and Robinson A. Torres

Development of an Auditory Cueing System to Assist Gait in Patients with Parkinson’s Disease
Vania Guimarães, Rui Castro, Ana Barros, João Cevada, Angels Bayés, Sheila García and Berta Mestre

Evolutionary Multiobjective Feature Selection in Multiresolution Analysis for BCI
Julio Ortega, Javier Asensio-Cubero, John Q. Gan and Andrés Ortiz
The Mining Minds Platform: a Novel Person-Centered Digital Health and Wellness Framework

Augmented Reality in Radiofrequency Ablation of the Liver Tumours
Lucio Tommaso De Paolis, Francesco Ricciardi and Cosimo Luigi Manes

Session A.9: "Computational Applications in Next Generation Sequencing"

Chairman: Dr. Sonia Tarazona

Computationally assessing RNA-protein binding affinity in IncRNAs
Carmen Navarro, Carlos Cano, Marta Cuadros and Armando Blanco

Comprehensive study of bivalent chromatin marks on promoters in mammalian embryonic stem cells.
Anna Mantsoki and Anagha Joshi

Supporting Bioinformatics Applications with Hybrid Multi-Cloud Services
Ahmed Abdullah Ali, Mohamed El-Kalioby and Mohamed Abouelhoda

Session B.9: "SS14: Ambient Intelligence for Bioemotional Computing"

Chairman: Drs. Natividad Martinez, Juan A. Ortega and Ralf Seepold

Externalising Moods and Psychological States to Smooth Pet-robot/Child Interaction through Bluetooth Communication
Ferran Larriba, Cristóbal Raya, Cecilio Angulo, Jordi Albo-Canals, Marta Díaz and Roger Boldú

Patient Lifecycle Management: An Approach for Clinical Processes
Alberto Salido López, Carmelo Del Valle Sevillano and María José Escalona Cuaresma

Advertising liking recognition technique applied to neuromarketing by using low-cost eeg headset
Luis Miguel Soria Morillo, Juan Antonio Alvarez-García, Luis Gonzalez-Abril and Juan Ortega

Heart Rate Variability indicating Stress visualized by Correlations Plots
Wilhelm Daniel Scherz, Juan Ortega, Natividad Martinez Madrid and Ralf Seepold

Emotions and Diabetes
Charrise M. Ramkissoon and Josep Vehí
IWBBIO 2015 Conference Program

Session A.10/B.10: Poster Session II

A genetic algorithm for motif finding based on statistical significance
Josep Basha Gutierrez, Martin Frith and Kenta Nakai

Energy Efficiency Study of representative Microcontrollers for Wearable Electronics
Gregor Rebel, Francisco Estevez and Peter Gloeskoetter

HvDBase: a web resource on Hydra Vulgaris transcriptome.
Daniela Evangelista, Kumar Parijat Tripathi, Valentina Scuotto and Mario Rosario Guarracino

A new approach to obtain EFMs using graph methods based on the shortest path between end nodes
Jose Francisco Hidalgo Céspedes, Francisco De Asís Guíl Asensio and Jose Manuel García Carrasco

Transcriptome-mining identification and in silico analysis of olive (Olea europaea L.) pollen NADPH oxidase homologous involved in allergy inflammation
Maria J. Jimenez-Quesada, Jose A. Traverso, Adoracion Zafra, Jose C. Jimenez-Lopez, Rosario Carmona, M. Gonzalo Claros and Juan D. Alche

Identification of distinctive variants of the olive pollen allergen Ole e 5 (Cu,Zn Superoxide Dismutase) throughout the analysis of the olive pollen transcriptome
Adoracion Zafra, Rosario Carmona, Jose C. Jimenez-Lopez, M. Gonzalo Claros and Juan D. Alche

Lupin allergy: uncovering structural features and epitopes of β-conglutin proteins in Lupinus angustifolius L. with a focus on cross-allergenic reactivity to peanut and other legumes
Jose C. Jimenez-Lopez, Elena Lima-Cabello, Su Melser, Rhonda C. Foley, Karam B. Singh and Juan D. Alche

A mobile application to enhance adherence to hormonal treatment in breast cancer survivors through a competitive social game
Maria De La Concepcion Perez De Celis Herrero, Enrique Soto-Perez-De-Celis, Felipé Orihuela-Espina, Yanin Chavarri Guerra, Maria Teresa Gutierrez Martinez, Alejandro Herrera de La Luz, Maria J. Somodevilla and Ivo H. Pineda Torres

Hierarchical Assembly of Pools
Riccardo Vicedomini, Francesco Vezzi, Simone Scalabrin, Lars Arvestad and Alberto Policriti

Statistical integration of p-values for enhancing discovery of radiotoxicity gene signatures.
Anna Papiez, Sylwia Kabacik, Christophe Badie, Simon Bouffler and Joanna Polanska

Non-canonical imperfect base pair predictor: the RNA 3D structure modeling process improvement.
Jacek Smietanski

A simple hair removal algorithm from dermoscopic images
Damian Borys, Paulina Kowalska, Mariusz Frackiewicz and Ziemowit Ostrowski
XTENS - a JSON-based digital repository for Biomedical Data Management
Massimiliano Izzo, Gabriele Arnulfo, Maria Carla Piastra, Valentina Tedone, Luigi Varesio and Marco Massimo Fato

Automatic segmentation system of emission tomography data based on classification system
Sebastian Student, Marta Danch-Wierzchowska, Kamil Gorczewski and Damian Borys

Cost-effectiveness studies in cardiology: application of medical devices
Radka Otavova, Vojtech Kamensk, Pavel Hasenohrlova and Vladimir Rogalewicz

Automated measurement of the density of vessels and Ki67-positive cells on whole slide images
Christophe Deroulers, Mathilde Badoual, Volodia Dangoulloff-Ros and Pascale Varlet

SimPLiSMS: A Simple, Lightweight and Fast Approach for Structured Motifs Searching
Ali Alatabbi, Shuhana Azmin, Md. Kawser Habib, Costas Iliopoulos and M. Sohel Rahman

Predicting sub-cellular location of proteins based on hierarchical clustering and hidden Markov models
Jorge Alberto Jaramillo-Garzón, Jacobo Castro-Ceballos and César Germán Castellanos

Evaluation of example-based measures for multi-label classification performance
Andrés Felipe Giraldo Forero, Jorge Alberto Jaramillo-Garzón and German Castellanos

An event-driven architecture for biomedical data integration and interoperability
Pedro Lopes and José Luis Oliveira

New insights in echocardiography based left-ventricle dynamics assessment
Susana Brás, Augusto Silva, José Ribeiro and José Luís Oliveira

Ontologies: A Basis for Integrating, Organizing and Representing Biological Data
Muhammad Tariq Pervez, Masroor Ellahi Babar and Tanveer Hussain

Intellectual Property Protection for Bioinformatics and Computational Biology
Dennis Fernandez, Antonia Maninang, Shumpei Kobayashi, Shashank Bhatia and Carina Kraatz

Medical Planning: Sterilization Department Design
Khaled Sayed

Inhibition of inflammatory reactions mediated by the CD36 receptor via Fyn kinase signaling pathway in the case of atherosclerosis
Zineb Tarhda and Ibrahimi Azeddine

Cluster Estimation on a Dendrogram
Mohammad Sajjad Ghaemi, Bruno Agard and Vahid Partovi Nia

Application of kappa statistics in sequential tests for family-based design
Farid Rajabli

A Practical Tool for Aligning Biological Signals using Various Warping Methods
Ahmet Elbir, Mustafa Duran and Fethullah Karabiber
Dose calculation in a mouse lung tumor and in secondary organs during radiotherapy treatment: A Monte Carlo study
   Mahdjoub Hamdi, Malika Mimi and M'Hamed Bentourkia

A novel approach to identify GO terms without a fold-change threshold limitation
   Farid Rajabli, Fatih Emekci, Unal Goktas and Gulistan Ozdogan

UX integrated cloud-based medical application for improving lifestyle in users
   Alexandru Serban, Mihaela Crisan-Vida, Maria-Corina Serban and Lacramioara Stoica-Tivadar

Reprogramming of cellular signalling networks following targeted mono- and combination anti-cancer therapy
   Alexey Goltsov, Yusuf Deeni, Hilal Khalil, Simon Langdon, David Harrison and James Bown

IRALLER: a Comprehensive Web Server for Bioinformatics Allergenicity Assessment of Novel Proteins
   Najaf Allahyari Fard

An Ontology for Dynamic Sensor Selection in Wearable Activity Recognition
   Claudia Villalonga, Oresti Banos, Hector Pomares and Ignacio Rojas

Use of Flaviviral Genetic fragment-based Vaccine as a Potential Prevention Strategy for HIV-1: A Computational and Molecular Analyses of HIV-1 Silencing Human microRNAs
   Prof. Omar Bagasra, Mahmudul Hasan, Muhammad Sheraz, Mazhar Kanak and Roshan Bhattarai

PROPOSAL FOR INTEROPERABILITY STANDARDS APPLICATIONS IN THE HEALTH SECTOR
   Octavio Salcedo Parra and Brayan Reyes

Determination of anti-proliferative effects of secondary metabolites isolated from halotolerant fungi, on colon cancer cells by Real Time Cell Analyze System (Xcelligence)
   Zerrin Canturk, Miris Dikmen and Semra Ilhan

Investigation of Anti-Candidal Effect of Halotolerant Fungal Secondary Metabolites
   Mustafa Guclu Ozarda, Zerrin Canturk, Miris Dikmen, Selin Engur and Semra Ilhan

In vitro evaluation of the cytotoxic, anti-proliferative, apoptotic and anti-migration properties of Fumagillin on C6 Glioma Cells
   Miris Dikmen
Session A.11: "SS1: Expanding Concept of Chaperone Therapy for Inherited Brain Disease"

Chairman: Dr. Yoshiyuki Suzuki

Introductory Remarks
Yoshiyuki Suzuki

Development of pharmacological chaperone candidates for Retinitis Pigmentosa and Niemann-Pick type C1 disease.
Tomomi Noguchi-Yachide

Non-cell autonomous therapeutic effects of molecular chaperones on polyglutamine disease models via its exosome-mediated intercellular transmission.
Yoshitaka Nagai, Toshihide Takeuchi and Keiji Wada

RECENT ADVANCES IN CHAPERONE DESIGN FOR LYSOSOMAL STORAGE DISORDERS
José M. García Fernández and Carmen Ortiz Mellet

Session B.11: "SS10: Towards an effective telemedicine: an interdisciplinary approach"

Chairman: Drs. Maria Francesca Romano and Daniel Cesarini

Simplifying tele-rehabilitation devices for their practical use in non-clinical environments.
Daniel Cesarini, Davide Calvaresi, Pasquale Buonoconto, Mauro Marinoni and Giorgio Buttazzo

Non-intrusive monitoring and data analysis for supporting general practitioners in following diseases evolution based on patients’ daily (motor) behaviour
Davide Calvaresi, Daniel Cesarini, Mauro Marinoni, Pasquale Buonoconto and Giorgio Buttazzo

Interactive business models for Telerehabilitation after Total Knee Replacement: Preliminary results from Tuscany.
Francesco Fusco and Giuseppe Turchetti

Ontological Personal Healthcare using Medical Standards
Yeong-Tae Song and Neekoo Torkian

Session A.12: "SS11-Part I: High Performance Computing in Bioinformatics, Computational Biology and Computational Chemistry"

Chairman: Dr. Hesham Ali

Applications of High Performance Computing in Bioinformatics, Computational Biology and Computational Chemistry
Horacio Pérez-Sánchez, Afshin Fassihi, José M. Cecilia, Hesham H. Ali and Mario Cannataro
Mobile access to on-line analytic bioinformatics tools
*Sergio Díaz Del Pino, Tor Johan Mikael Karlsson, Juan Falgueras Cano and Oswaldo Trelles*

A GPU solution of the HP Protein Folding Problem based on UEGO
*José María García Martínez, Ester Martín Garzón, José María Cecilia, Horacio Pérez Sanchez and Pilar Martínez Ortigosa*

Enhancing the parallelization of Non-Bonded Interactions Kernel for Virtual Screening on GPUs
*Baldomero Imbernón, Antonio Llanes, Jorge Peña-García, Horacio Pérez-Sánchez and José M Cecilia*

Session B.12: ”SS6: Dynamics networks in system medicine”

*Chairman: Dr. Narsis Aftab Kiani*

Numerical Investigation of Graph Spectra and Information Interpretability of Eigenvalues
*Hector Zenil, Narsis Kiani and Jesper Tegner*

Modeling of the Urothelium with an Agent Based Approach
*Angelo Torelli, Fabian Siegel, Philipp Erben and Markus Gumbel*

NEArender: a new R package for rendering 'omics' data into pathway space using network enrichment analysis
*Andrey Alexeyenko, Ashwinipriya Jeggari and Simon Kebede Merid*

Flexible and fast linear program to infer signaling networks
*Marta Matos, Bettina Knapp, Fabian Theis and Lars Kaderali*

Session A.13: ”SS11-Part II: High Performance Computing in Bioinformatics, Computational Biology and Computational Chemistry”

*Chairman: Drs. Horacio Pérez-Sánchez and Jose M. Cecilia*

Identification of Biologically Significant Elements using Correlation Networks in High Performance Computing Environments
*Kathryn Dempsey, Sachin Pawaskar and Hesham Ali*

isDNA: A tool for real-time visualization of plasmid DNA Monte-Carlo simulations in 3D
*Adriano Raposo and Abel Gomes*

Computing Biological Model Parameters by Parallel Multi-Core Statistical Model Checking
*Toni Mancini, Enrico Tronci, Ivano Salvo, Federico Mari, Annalisa Massini and Igor Melatti*

Support Vector Machines Prediction of drug solubility on GPUs
*Gaspar Cano, José García-Rodríguez, Jorge Peña-García, Dharmendra Kumar-Yadav, Alfonso Pérez-Garrido and Horacio Pérez-Sánchez*

Molecular Dynamics Simulations of Ligand Recognition upon Binding Antithrombin: A MM/GBSA Approach
*Xiaohua Zhang, Horacio Perez-Sanchez and Felice Lightstone*
Predicting atherosclerotic plaque location in an iliac bifurcation using a hybrid CFD/biomechanical approach  
*Mona Alimohammadi, Cesar Pichardo-Almarza, Giulia Di Tomaso, Stavroula Balabani, Obiekezie Agu and Vanessa Daz-Zuccarini*

**Session B.13: "Computational systems for modelling biological and biomedical processes"**

*Chairman (tentative): Dr. Philipp Erben*

The MetaboX library: building metabolic networks from KEGG database  
*Francesco Maiorano, Luca Ambrosino and Mario Guarracino*

Logical Modeling and Analysis of Regulatory Genetic Networks in a Non Monotonic Framework  
*Nicolas Mobilia, Alexandre Rocca, Samuel Chorlton, Eric Fanchon and Laurent Trilling*

Incorporating multiple recurrences in a flowgraph model for bladder carcinoma  
*Gregorio Rubio, Belen Garcia-Mora, Cristina Santamaria and Jose Luis Pontones*

A Computational Domain-based Feature Grouping Approach for Prediction of Stability of SCF Ligases  
*Mina Maleki, Mohammad Haj Dezfulian and Luis Rueda*

Identifiability of Nonlinear ODE Models in Systems Biology: Results from both Structural and Data-based methods  
*Maria Pia Saccomani*

What makes a protein sequence a prion?  
*Salvador Ventura*

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**CLOSING PLENARY LECTURE:**

Prof. Patrick Aloy  
Structural Bioinformatics and Network Biology Group  
Institute for Research in Biomedicine (IRB)  
Barcelona (SPAIN)
Session A.14: "Biological Sequence Analysis and Alignments"

Chairman: Dr. Francisco Ortuño

Alignment Free Frequency Based Distance Measures for Promoter Sequence Comparison
  Kouser, Lalitha Rangarajan, Darshan S Chandrashekar, Kshitish K Acharya and Emin Mary Abraham

Relation between Insertion Sequences and Genome Rearrangements in Pseudomonas aeruginosa
  Huda Al-Nayyef, Christophe Guyeux, Marie Petitjean, Didier Hocquet and Jacques Bahi

Biological Sequence Alignment and Compression via Shortest Unique Substring Identifiers
  Borun Adas, Ersin Bayraktar, Simone Faro, Ibrahem Moustafa and M. Oguzhan Kulekci

Energy-Efficient Architecture For DP Local Sequence Alignment: Exploiting ILP and DLP
  Miguel Cruz, Pedro Tomás and Nuno Roma

Session B.14: "Computational Methods for Biomedical Signal Analysis"

Chairman (tentative): Dr. Antonio Pinti

Alpha Rhythm Dominance in Human Emotional Attention States: An Experimentation with 'idling' and 'binding' Rhythms.
  Mohammed G Al-Zidi, Jayasree Santhosh and Jamal Rajabi

Optimal Elbow Angle for MMG Signal Classification of Biceps Brachii during Dynamic Fatiguing Contraction
  Mohamed Al-Mulla, Francisco Sepulveda and Mohammad Suoud

Feature Selection for Best Identification of Congestive Heart Failure Using Artificial Neural Network
  Abdulnasir Yahya Hossen Hossen
Virtual Presentation Session

**Preliminary Research on Combination of Exponential Wavelet and FISTA for CS-MRI**  
*Yudong Zhang, Shuihua Wang, Genlin Ji and Zhengchao Dong*

Towards a More Efficient Discovery of Biologically Significant DNA Motifs  
*Aqil Azmi and Abdulrakeeb Al-Ssulami*

*GA-based feature selection with ANFIS approach to breast cancer recurrence*  
*Hamza Turabieh and Muhanna Muhanna*

Blind and Visually Impaired students can perform computer-aided molecular design with an assistive molecular fabricator  
*Valere Lounnas, Hoby Wedler, Tim Newman, Jon Black and Gerrit Vriend*

Detection of Pathological Brain in MRI scanning based on Wavelet-entropy and Naïve Bayes Classifier  
*Xingxing Zhou, Shuihua Wang, Wei Xu, Genlin Ji, Preetha Phillips, Ping Sun and Yudong Zhang*

Characterization of pneumonia incidence supported by a business intelligence system  
*Maribel Yasmina Santos, Vera Leite, Antonio Carvalheira and Artur Teles de Araújo*

Are wildfires and pneumonia spatially and temporally related?  
*Maribel Yasmina Santos, Vera Leite, Antonio Carvalheira and Artur Teles de Araújo*

An Ensemble of Cooperative Parallel Metaheuristics Gene Selection method for Cancer Classification  
*Anouar Boucheham and Mohamed Batouche*

Linear accelerator bunkers: Shielding Verification  
*Khaled Sayed and Shereen El-Metwally*

Portable Low-cost Heart Attack Detection System using ZigBee Wireless Technology  
*Khaled Sayed and Shereen El-Metwally*

Towards exact segmentation of corneal endothelial cells  
*Adam Piorkowski and Jolanta Gronkowska-Serafin*

Sliding box method for automated detection of the optic disc and macula in retinal images  
*Dan Popescu, Loretta Ichim and Radu Dobrescu*

A model of the dynamics of a population of diabetics with and without complications with optimal control  
*Wiam Boutayeb, Mohamed E.N. Lamli, Mohammed Derouich and Abdesslam Boutayeb*

The impact of obesity on type 2 Diabetes: Mathematical model  
*Wiam Boutayeb, Abdesslam Boutayeb and Mohamed E.N.Lamlili*
Systematic comparison of machine learning methods for identification of miRNA species as disease biomarkers

Chihiro Higuchi, Toshihiro Tanaka and Yukinori Okada

Heart rate regularity changes in older people with orthostatic intolerance

Marcos Hortelano, Richard B. Reilly, Lisa Cogan and Raquel Cervigón

Entropy analysis of atrial activity morphology to study atrial fibrillation recurrences after ablation procedure

Raquel Cervigón, Javier Moreno, Gastón Schlotthauer and María Eugenia Torres

A Novel Algorithm for Segmentation of Suspicious Microcalcification Regions on Mammograms

Burçin Kurt, Vasif Nabiyev and Kemal Turhan
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