IWBBIO 2018
INTERNATIONAL WORK-CONFERENCE ON BIOINFORMATICS AND BIOMEDICAL ENGINEERING

PROGRAM

25-27 April, 2018
Granada (SPAIN)
# IWBBIO 2018 Short Program

## Wednesday, April 25, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Session A.1: Next generation sequencing and sequence analysis (Part. I)</th>
<th>Session B.1: Biomedical image analysis</th>
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<tr>
<td>8:30-10:00</td>
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<td>10:00-10:30</td>
<td><strong>COFFEE BREAK</strong></td>
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<tr>
<td>10:30-11:30</td>
<td><strong>OPENING PLENARY LECTURE.</strong> Prof. Dr. Luis Rueda</td>
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<tr>
<td>11:30-12:45</td>
<td>Session A.2: Bioinformatics for healthcare and diseases</td>
<td>Session B.2: Biomedical Engineering (Part. I)</td>
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<tr>
<td>12:45-13:30</td>
<td>Session A.3: Computational proteomics</td>
<td>Session B.3: High-throughput bioinformatic tools for medical genomics</td>
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<td>13:30-15:00</td>
<td><strong>LUNCH &amp; COFFEE</strong></td>
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<tr>
<td>15:00-16:30</td>
<td>Session A.4: Interpretable models in biomedicine and bioinformatics</td>
<td>Session B.4: Drug Delivery System Design Aided by Mathematical Modelling and Experiments</td>
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<td>16:30-17:00</td>
<td><strong>COFFEE BREAK</strong></td>
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<td>17:00-18:00</td>
<td><strong>PLENARY LECTURE.</strong> Dr. Anagha Joshi</td>
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<tr>
<td>18:00-19:30</td>
<td>Session A.5: Computational systems for modelling biological processes</td>
<td>Session B.5: Healthcare and diseases</td>
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## NOTES:

- All **Sessions A** will be held in Salón de Grados, Edificio Mecenas (just 25 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 (26th April at 20:00 for the Gala Dinner at Hotel Alhambra Palace and 27th April at 16:30 for the visit to Alhambra).
<table>
<thead>
<tr>
<th>Time</th>
<th>Session A.6: Little-big data. Reducing the complexity and facing uncertainty of highly underdetermined phenotype prediction problems</th>
<th>Session B.6: Biomedical image analysis</th>
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<td>8:30-10:00</td>
<td><strong>PLENARY LECTURE.</strong> Prof. Dr. FangXiang Wu</td>
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<td><strong>PLENARY LECTURE.</strong> Prof. Dr. Jiayin Wang</td>
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<tr>
<td>11:30-12:45</td>
<td>Session A.7: Computational genomics (Part. I)</td>
<td>Session B.7: Challenges in smart and wearable sensor design for mobile health</td>
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<td>12:45-13:30</td>
<td>Session A.8: Next generation sequencing and sequence analysis (Part.II)</td>
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<td>15:00-16:30</td>
<td>Session A.9: Computational systems for modelling biological processes</td>
<td>Session B.9: Biomedical Engineering (Part.II)</td>
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<td>18:00-18:45</td>
<td>Session A.10: Bioinformatics tools to integrate omics dataset and address biological question</td>
<td>Session B.10: Biomedical Engineering (Part.III)</td>
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<tr>
<td>20:00</td>
<td><strong>Gala Dinner at Hotel Alhambra Palace</strong></td>
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<tr>
<td>Time</td>
<td>Session A.12: Generation, Management and Biological Insights from Big Data</td>
<td>Session B.12: Challenges and advances in measurement and self-parametrization of complex biological systems</td>
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<tr>
<td>11:30-12:45</td>
<td>Session A.13: Modelling biological and biomedical processes</td>
<td>Session B.13: Biomedical Engineering (Part. IV)</td>
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<tr>
<td>12:45-14:00</td>
<td>Session A.14: Computational genomics (Part. II)</td>
<td>Session B.14: Biomedicine/Bioinformatics for healthcare and diseases</td>
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<td>14:00-16:30</td>
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<tr>
<td>16:30</td>
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<td>Visit to the Alhambra</td>
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</table>
Session A.1: Next generation sequencing and sequence analysis (Part.I)

Chairman: Dr. Fostier Jan and Dr. Li Liu

New features and recipes for simulating structural mutations with BAMSurgeon
Adam Ewing

Quality Assessment of High-Throughput DNA Sequencing Data via Range Analysis
Ali Fotouhi, M. Oguzhan Kulekci and Mina Majidi

A BLAS-based Algorithm for Finding Position Weight Matrix Occurrences in DNA sequences on CPUs and GPUs
Jan Fostier

Estimating the distributions of Micro-Satellite Instability from next generation sequencing data
Xuan Feng, Huan Hu, Zhongmeng Zhao, Xuanping Zhang, Yu Geng, Xiao Xiao and Jiayin Wang

Session B.1: Biomedical image analysis

Chairman: Dr. Yoshihiro Ishikawa and Dr. Arvydas Palevicius

Stochastic geometry for automatic assessment of Ki-67 index in breast cancer preparations
Marek Kowal, Marcin Skobel, Jozef Korbicz and Roman Monczak

Detection methods of static microscopic object
Libor Hargas, Zuzana Loncova, Dusan Koniar, Frantisek Jabloncik and Jozef Volak

Contrast enhancement methods for images from the light microscope
Frantisek Jabloncik, Libor Hargas, Dusan Koniar and Jozef Volak

Quantitative ultrasound of tumor surrounding tissue for enhancement of breast cancer diagnosis
Ziemowit Klimonda, Katarzyna Dobruch-Sobczak, Hanna Piotrzkowska-Wroblewska, Piotr Karwat and Jerzy Litniewski

A Texture Analysis Approach for Spine Metastasis Classification in T1 and T2 MRI
Mohamed Amine Larhmam, Saïd Mahmoudi, Stylianos Drisis and Mohammed Benjelloun
PLENARY LECTURE:
Prof. Luis Rueda
Professor, School of Computer Science, Pattern Recognition and Bioinformatics Lab, Windsor Cancer Research Group, University of Windsor

Session A.2: Bioinformatics for healthcare and diseases

Chairman: Dr. Adam Ewing and Dr. Pedro J. Sola-Campoy

PlasmidID: a mapping based tool for plasmid identification, annotation, classification and representation. Application as high-risk strains plasmid detection.

Pedro J. Sola-Campoy, Sara Monzon, Maria Perez-Vazquez, Belen Aracil, Jose Campos, Jesus Oteo and Isabel Cuesta

Case-based reasoning systems for medical applications with improved adaptation and recovery stages

Xiomara Blanco, David Bastidas, Camilo Piñeros and Diego Peluffo

Detecting Cancer-Associated Epistatic Gene Variants in Lung Adenocarcinoma
Jaume Sastre Tomas, Jairo Rocha, Alexander Damia Heine Suñer and Emidio Capriotti

Session B.2: Biomedical Engineering (Part. I)

Chairman: Dr. Inmaculada Mora Jimenez and Dr. Libor Hargas

Arterial graft made from cultured cell-layers
Yoshihiro Ishikawa

Composite Piezoelectric Material for Biomedical Micro Hydraulic System
Arvydas Palevicius, Giedrius Janusas, Elingas Cekas and Yatinkumarrajesbhai Patel

Potentiometric Screen-Printed Sensors for Wireless Monitoring of Wound Healing
Andrzej Peplowski, Daniel Janczak, Lukasz Gorski, Michal Zbiec, Dariusz Obrebski and Malgorzata Jakubowska

Session A.3: Computational proteomics

Chairman: Dr. Erzsébet Fichó and Dr. Sabrina Silveira

Fighting fire with fire: computational prediction of microbial targets for bacteriocins
Edgar Duarte Coelho, Joel Arrais and Jose Luis Oliveira

When intrinsically disordered proteins are ordered
Erzsebet Ficho, Istvan Simon and Balint Meszaros
A graph-based approach for querying protein-ligand structural patterns

Renzo Angles and Mauricio Arenas

Session B.3: High-throughput bioinformatic tools for medical genomics

Chairman: Dr. Gonzalo Claros and Dr. Javier Perez Florido

NearTrans can identify correlated expression changes between retrotransposons and surrounding genes in human cancer

Rafael Larrosa Jimenez, Macarena Arroyo, Rocio Bautista, Carmen Maria Lopez-Rigol and M. Gonzalo Claros

Meta-Alignment: Combining sequence aligners for better results

Beat Wolf, Pierre Kuonen and Thomas Dandekar

Exploiting in-memory Systems for Genomic Data Analysis

Zeeshan Shah, Mohamed El-Kalioby, Tariq Faqih, Mostafa Shokrof, Shazia Subhani, Ashiq Anjum and Mohamed Abouelhoda

Session A.4: Interpretable models in biomedicine and bioinformatics

Chairman: Dr. Alfredo Vellido, Dr. Sandra Ortega-Martorell, Dr. Alessandra Tosi, Dr. Iván Olier Caparrosa

Metastasis of cutaneous melanoma: risk factors, detection and forecasting

Iker Malaina, Leire Legarreta, Mª Dolores Bogano, Jesus Gardeazabal, Carlos Bringas, Luis Martinez and Ildefonso M. de La Fuente

Graph Theory Based Classification of Brain Connectivity Network for Autism Spectrum Disorder

Ertan Tolan and Zerrin Isik

On the use of Betweenness Centrality for selection of plausible trajectories in Qualitative Biological Regulatory Networks

Muhammad Tariq Saeed, Jamil Ahmed and Amjad Ali

Detect and Predict Melanoma utilizing TCBR and Classification of Skin lesions in a Learning Assistant System

Sara Nasiri, Matthias Jung, Julien Helsper and Madjid Fathi

Session B.4: Drug Delivery System Design Aided by Mathematical Modelling and Experiments

Chairman: Ph.D cand Kristinn Gudnason, Prof. Fjola Jonsdottir, Prof. Emeritus Sven Sigurdsson and Prof. Mar Masson

Controlling drug delivery from multi-layer polymeric coated capsules

Giuseppe Pontrelli, Elliot Carr, Badr Kaoui, Marco Lauricella and Sauro Succi

Drug diffusion properties of hydrogels: numerical and experimental studies

Svetlana Solodova, Andreas Pimenta, Kristinn Gudnason, Ana Paula Serro, Fjola Jonsdottir, Sven Sigurdsson and Mar Masson
Numerical evaluation of skin sub layer properties

*Bergthora Snorradottir, Kristinn Gudnason, Fjola Jonsdottir, Sven Sigurdsson and Mar Masson*

Modelling the Release of Moxifloxacin from Plasma Grafted Intraocular Lenses with Rotational Symmetric Numerical Framework

*Kristinn Gudnason, Fjola Jonsdottir and Sven Sigurdsson*

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**PLENARY LECTURE:**

**Dr. Anagha Joshi**

Bioinformatics Group Leader, Developmental Biology Division, The Roslin Institute, University of Edinburgh, UK

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**Session A.5: Computational systems for modelling biological processes**

*Chairman: Dr. Giuseppe Pontrelli and Dr. Alexander Saltykov*

The binding of agonists to the NOP receptor revealed in silico” by Multi-flexible docking and QM/MM.

Stefano Della Longa and Alessandro Arcovito

Computational study on peptide conformations of µ-conotoxins using molecular dynamics and computer visualization methods

Ajay Abisheck Paul George, Astrid Maas, Diana Imhof, Nils Lichtenberg, Raphael Menges and Kai Lawonn

Predicting Disease Genes from Clinical Single Sample-Based PPI Networks

Ping Luo, Li-Ping Tian, Bolin Chen, Qianghua Xiao and Fangzhang Wu

Classification of cardiovascular pathologies in artificial signals of a lumped parameter model using a naive Bayes algorithm

Stefan Krickl, Manuel Debic and Stefan Bernhard

Putative oxidative folding pathways of the disulfide rich inhibitory peptide Tridegin

Ajay Abisheck Paul George, Arijit Biswas, Monica Sudarsanam and Diana Imhof

Red Blood Cell Model Validation in Dynamic Regime

Alzbeta Bohinikova, Kristina Kovalcikova, Martin Slavik, Ivan Cimrak and Isabelle Mazza Guimaraes

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**Session B.5: Healthcare and diseases**

*Chairman: Dr. Hissam Tawfik and Dr. Vitaly Belik*

Chard (Beta Vulgaris Var.Cicla) Extract Modulates Zinc Status, Glucose Level and Antioxydant Values in Diabetic Rats Fed Zinc Deficiency Diet

Zine Kechrid and Malika Hamdiken
The prognostic value of clinical variables for the treatment response in rheumatoid arthritis

_**Alexander Platzer, Daniela Sieghart, Farideh Alasti, Guenter Steiner and Josef Smolen**_

Exploring In-Game Reward Mechanisms in Diaquarium – A Serious Game for Children with Type 1 Diabetes

_Ida Charlotte Rønningen, Eirik Årsand and Gunnar Hartvigsen_

The PERSON project: A brain computer interface serious game for neurorehabilitation

_Alfonso Monaco, Nicola Amoroso, Roberto Bellotti, Paolo Da Pelo, Domenico Diacono, Gianluca Sforza and Sabina Tangaro_

Abnormal conditions delay effective age as predicted by gut microbiome composition in piglets

_Vitaly Belik, Adrian Pacheco, Ramon Xuli-Brunet and Robert Pieper_

Cytotoxicity of Secnidazole cocristals on cells infected with Trypanosoma cruzi

_Carolina Barrientos-Salcedo, Miechel Merari Vichi Ramirez, Edgar Lopez Lopez and Catalina Soriano-Correa_
Thursday, April 26, 2017

Session A.6: Little-big data. Reducing the complexity and facing uncertainty of highly underdetermined phenotype prediction problems

**Chairman: Dr. Juan Luis Fernandez-Martinez**

Know-GRRF: Domain-Knowledge Informed Biomarker Discovery with Random Forests

*Xin Guan and Li Liu*

Developing a system biology framework to explore dynamic regulations of myeloma cancer by integrating experimental data and mathematical modeling techniques

*Le Zhang*

Sampling defective pathways in phenotype prediction problems via the Fisher’s ratio sampler


Sampling defective pathways in phenotype prediction problems via the Holdout sampler


Comparison of different sampling algorithms for phenotype prediction


Session B.6: Biomedical image analysis

**Chairman: Dr. Daniela Purcea and Dr. Juan Manuel Galvez**

FLIR vs SEEK in Biomedical Applications of Infrared Thermography

*Ondrej Krejcar and Ayca Kirimtat*

Advances in homotopy applied to object deformation

*Jose Alejandro Salazar-Castro, Lilian Dayana Cruz Cruz, Diego Hernan Peluffo-Ordoñez and Ana Umaquinga*

Thermal Imaging for Localization of Anterior Forearm Subcutaneous Veins

*Ondrej Krejcar and Orcan Alpar*

Detection of Irregular Thermoregulation in Hand Thermography by Fuzzy C-Means

*Ondrej Krejcar and Orcan Alpar*

Medical Image Analysis with Handcrafted or Non-Handcrafted Texture Descriptors: a performance evaluation

*Joke Badejo and Emmanuel Adetiba*
Parametric variations of anisotropic diffusion and Gaussian high-pass filter for NIR image preprocessing in vein identification

Ondrej Krejcar and Ayca Kirimatat

PLENARY LECTURE:
Prof. FangXiang Wu
P.Eng, SMIEEE Professor, Division of Biomedical Engineering, Prof. Dept. Mechanical Engineering, College of Engineering, University of Saskatchewan, SK Canada

Session A.7: Computational genomics (Part. I)

Chairman: Dr. Abraham Korol and Dr. Manuel Rodríguez Maresca
Models of multiple interactions from collinear patterns
Leon Bobrowski and Pawel Zabielski
Identification of the Treatment Survivability Gene Biomarkers of Breast Cancer Patients via a Tree-Based Approach
Ashraf Abou Tabl, Abed Alkhateeb, Luis Rueda, Waguih Elmaraghy Elmaraghy and Alioune Ngom
Workflows and service discovery: A mobile device approach
Ricardo Holthausen, Sergio Diaz-Del-Pino, Esteban Perez-Wohlfeil and Oswaldo Trelles
Analyzing the differences between reads and contigs when performing a taxonomic assignment comparison in metagenomics
Pablo Rodriguez-Brazzarola, Esteban Perez-Wohlfeil, Sergio Diaz-Del-Pino, Ricardo Holthausen and Oswaldo Trelles

Session B.7: Challenges in smart and wearable sensor design for mobile health

Chairman: Dr. Natividad Martínez Madrid, Dr. Juan Antonio Ortega and Dr. Ralf Seepold
Reconstruction of equivalent electrical sources on heart surface
Mikhail Kramm, Ralf Seepold, Galina Zhikhareva, Oleg Bodin, Anton Chernikov, Jana Kaprijanova and Natalija Zhuravleva
WearIT - A Rapid Prototyping Platform for Wearables
Isabel Leber and Natividad Martinez Madrid
A review of health monitoring systems using sensors on bed or cushion
Simone Orcioni, Massimo Conti, Natividad Martinez Madrid, Maksym Gaiduk and Ralf Seepold
Textile Sensor Platform (TSP)
Development of an textile live ECG
*Thomas Walzer, Christian Thies, Klaus Meier and Natividad Martinez Madrid*

Sensor-mesh-based system with application on sleep study
*Maksym Gaiduk, Bruno Vanderl, Ralf Seepold, Juan Antonio Ortega and Thomas Penzel*

A Wearable Pneumatic Sensor for Non-invasive Continuous Arterial Blood Pressure Monitoring
*Viacheslav Antsiperov and Gennady Mansurov*

New parameter available in phonocardiogram for blood pressure estimation
*Omari Tahar, Ouacif Nadia, Benali Redouane, Dib Nabil and Bereksi-Reguig Fethi*

### Session A.8: Next generation sequencing and sequence analysis (Part.II)

*Chairman: Dr. Bobrowski Leon*

CIGenotyper: A machine learning approach for genotyping complex indel calls
*Tian Zheng, Yang Li, Yu Geng, Zhongmeng Zhao, Xuanping Zhang, Xiao Xiao and Jiayin Wang*

Interplay of biological and computational challenges in genome mapping
*Abraham B. Korol*

### Session A.9: Computational systems for modelling biological processes

*Chairman: Dr. Iker Malaina, Dr. Jian Shi (tent.) and Dr. Ignacio Larrayoz Roldán (tent.)*

Red blood cell model with different implementation of viscoelastic parameter
*Mariana Ondrusova*

Simulation of Blood Flow in Microfluidic Devices for Analysing of Video from Real Experiments
*Katarina Bachrata, Hynek Bachraty, Martin Slavik, Michal Chovanec, Monika Smieskova and Frantisek Kajanke*

Alignment-free Z-Curve Genomic Cepstral Coefficients and Machine Learning for Classification of Viruses
*Emmanuel Adetiba, Tunmise Taiwo, Marion Adobiyi, Joke Badejo, Akanle Matthew and Victor Matthews*

A combined approach of multiscale texture analysis and interest point/corner detectors for microcalcifications diagnosis
*Liliana Losurdo, Anna Rita Fanizzi, Teresa Basile, Roberto Bellotti, Ubaldo Bottigli, Rosalba Dentamaro, Vittorio Didonna, Alfonso Fausto, Raffaella Massafra, Alfonso Monaco, Marco Moschetta, Ondina Popescu, Pasquale Tamborra, Sabina Tangaro and Daniele La Forgia*
An Empirical Study of Word Sense Disambiguation for Biomedical Information Retrieval System

Mohammed Rais and Abdelmonaime Lachkar

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

Chairman: Dr. Michael Sadovsky

Trabecular Bone Score in overweight and normal-weight young women
Abdel-Jalil Berro, Marie-Louise Ayoub, Antonio Pinti, Ahmaidi Said, Georges El Khoury, Cesar El Khoury, Eddy Zakhem, Bernard Cortet and Rawad El Hage

Sarcopenia and hip structure analysis variables in a group of Lebanese postmenopausal women
Riad Nasr, Eric Watelain, Antonio Pinti, Ghassan Maalouf, Abdel-Jalil Berro, Abir Alwan, Cesar Al Khoury, Ibrahim Fayad, Rawad El Hage and Hayman Saddik

Feet Fidgeting Detection Based on Accelerometers Using Decision Tree
Julien Esseiva, Maurizio Caon, Elena Mugellini, Omar Abou Khaled and Kamiar Aminian

Engineered Surfaces for Enhanced Gene Transfer
Michael Schrlau

Aging Effect on the Pelvis to Head Attenuation of Upper Body Rotation during Walking
Hyeongmin Jeon, Jaehoon Heo, Euibum Choi and Gwang Moon Eom

PLENARY LECTURE:
Prof. Jiayin Wang
Professor, Department of Computer Science and Technology, Xi’an Jiaotong University (China)

Session A.10: Bioinformatics tools to integrate omics dataset and address biological question

Chairman: Dr. Domenica Scumaci and Dr. Ignacio Rojas

Detecting differentially methylated regions by enrichment analysis
Jordi Martorell-Marugan and Pedro Carmona-Saez

Explorative Analysis of Differential Expression in the Clinical Context
Milena Kraus, Guenter Hesse, Tamara Slosarek, Marius Danner, Ajay Kesar, Akshay Bhushan and Dr. Matthieu-P. Schapranow
Constructing a quantitative fusion layer over the semantic level for scalable inference

_Anras Gezsi, Bence Bruncsics and Peter Antal_

**Session B.10: Biomedical Engineering (Part.III)**

*Chairman: Dr. Antonio Pinti*

Matching Confidence Masks with Experts Annotations for Estimates of Chromosomal Copy Number Alterations

_Jorge Munoz, Yurii Semenovich, Tatiana Popova and Janette Perez_

Augmented Visualization and Touchless Interaction with Virtual Organs

_Lucio Tommaso De Paolis_

**Session A.11/B.11: Poster Session**

*Chairman: Dr. Fernando Rojas, Dr. Daniel Castillo Secilla, Dr. Juan Manuel Galvez and Dr. Ignacio Rojas*

Presence of stochastic resonance in isolated mouse heart

_Alderto Peña-Romo and Jesus Rodriguez-Gonzalez_

Computer Model of Conditional-Reflex Training in a Probably-Organized Environment

_Alexander Saltykov_

Bioinformatics Analysis of a Subtype of Glioblastoma Responding to Bevacizumab Treatment

_Jian Shi_

Bioinformatic analysis of selected aptamer sequences allows the identification of RNA tools for the functional analysis of West Nile virus genomic RNA elements

_Cristina Romero-Lopez, Beatriz Berzal-Herranz and Alfredo Berzal-Herranz_

Design of genus-specific probes and primers for detection and identification of viral DNA in environmental samples using next-generation sequencing method

_Andrey Ayginin, Anna Speranskaya, Alina Matsvai, Vladimir Dedkov, Marina Sagonova, Ekaterina Pinkina, Dmitry Shagin, Mikhail Markelov, German Shipulin and Kamil Khafizov_

Main features and evaluation of different workflows for differential gene expression studies through RNA-Seq samples

_alvaro Perez Sala and Ignacio M. Larrayoz Roldan_

Numerical study of the hemodynamic parameters of Y-bypass graft at rest and exercise state

_AliRza Rostami, Ghassem Heidarinejad, Hamidreza Babakhani and Moksen S Tabatabaei_

Numerical study of the effect of stenosis on the hemodynamic parameters in branch of LAD coronary using 0D/3D coupling method

_AliRza Rostami, Ghassem Heidarinejad, Hamidreza Babakhani and Moksen S Tabatabaei_
Comparison of the hemodynamic parameters of sequential parallel and cross configurations of coronary artery in the rest state
  Alireza Rostami, Ghassem Heidarinejad, Hamidreza Babakhani and Mohsen S Tabatabaei

Impedance Analysis of Different Shapes of the Normal and Malignant White Blood Cells
  Sameh Sherif

Effects of external voltage in the dynamics of pancreatic beta-cells: implications for the treatment of diabetes.
  Ramon Enrique Ramayo Gonzalez, Jose Radames Ferreira Da Silva and Romildo Albuquerque Nogueira

Improved determination of hydration structure facilitates correct prediction of drug binding
  Csaba Hetenyi, Istvan Horvath, Monika Balint and Norbert Jeszenoi

ISaC: Identifying Structural relations in biological data with Copula-based kernel dependency measures
  Raghvendra Mall, Hossam Al Meer, Ehsan Ullha, Nasreddine Megrez and Halima Bensmail

Understanding the process of gut microbiota development
  Alejandra Rey-Marino, Susana Ruiz-Ruiz, Nuria Jimenez-Hernandez, Javier Pons, Alejandro Artacho and M. Pilar Francino

Systematic characterisation of enhancer elements in mouse ES cells
  Karla Parussel and Anagha Joshi

The effect of c-myc monoclonal antibody for gastric cancer cells in vivo and in vitro
  Hu Haixia, Su Yanzhuo, Song Bin and Du Juan

Density peaks clustering approach to detect rare cell types from single-cell RNA-seq data
  Rashid Mehmood and Rongfang Bie

Impressive improvement of biocompatibility, surface and mechanical properties of metallic biomaterials under magnetoelectropolishing (MEP)
  Tadeusz Hrymiewicz, Ryszard Rokicki and Krzysztof Rokosz

Kernel conditional embeddings for associating omic data types
  Ferran Reverter, Esteban Vegas and Josep M Oller

An online viewer of FHR signal for research E-learning and tele-medicine
  Samuel Boudet, Agathe Houze de L’aunoir, Antonio Pinti, Romain Demaily, Michael Genin, Regis Beuscart, Laurent Pegrodie and Denis Houze de L’aunoir

Graphene layers and coatings in biomedical applications
  Lucja Dybowska-Sarapuk, Andrzej Kotela and Malgorzata Jakubowska

PIKA VIRUS: A Metagenomics Tool for Viral Community Analysis
  Andrea Rubio, Sara Monzon, Pedro J. Sola-Campoy and Isabel Cuesta

Classification in fMRI studies: in search of brain informative regions.
  Juan E Arco, Paloma Diaz-Gutierrez, Javier Ramirez and Maria Ruiz
SalivaPRINT Toolkit: Development, Challenges and Applications
  Igor Cruz, Eduardo Esteves, Monica Fernandes, Nuno Rosa, Maria Jose Correia and Marlene Barros

Cardiac Pulse Modeling Using a Modified van der Pol Oscillator and Genetic Algorithms
  Fabian Lopez, Andres Arciniegas, David Esteban Imbajoa Ruiz, Paul Rosero, Pedro Garcia, Andres Eduardo Castro Ospina, Antonio Acosta and Diego Hernan Peluffo-Ordoñez

Model Reduction in Protein Tertiary Structure prediction via Singular Value Decomposition
  Oscar Alvarez-Machancoses, Juan Luis Fernandez-Martinez, Ana Cernea, Zulima Fernandez-Muniz and Andrzej Kloczkowski

Computational Modelling of the Possible Cancer Synergic Treatment Combining Oncolytic Treatment and Induced Immune Cytotoxicity.
  Jose-Antonio Lopez-Valverde

Using Orientation Sensors to Control a FES System for Upper-Limb Motor Rehabilitation
  Andres F. Ruiz-Olaya, Alberto Lopez-Delis and Adson Ferreira Da Rocha

A Real-Time Research Platform for Intent Pattern Recognition: Implementation, Validation and Application
  Andres F. Ruiz-Olaya, Gloria Diaz and Alberto Lopez-Delis

Low data fusion framework oriented to information quality for BCI systems
  Miguel Alberto Becerra Botero, Karla C. alvarez-Uribe and Diego Hernandez Peluffo-Ordoñez

Potential therapeutic target to avoid cetuximab resistance
  Mariama El Baroudi, Jean-Pascal Machiels and Sandra Schmitz

The roles and mechanisms of celecoxib in gastric cancer NCI-N87 cells
  Song Bin, Du Juan and Su Yanzhuo

Gene Expression-based Cancer Classification with Handling the Class Imbalance Problem
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The importance of using quality control samples to apply data processing methods in large fingerprinting metabolomic studies. A practical case with 288 samples of systemic autoimmune diseases.

Alvaro Fernandez Ochoa, Isabel Borras Linares, Rosa Quirantes Pine, Marta E Alarcon Riquelme and Antonio Segura Carretero

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Mantas Saranskas, Povilas Gibas and Juozas Gordevicius

Bioinformatic analysis of microbial DNA sequences related to undesirable metabolic activities

Agustin Lasserrot, Ignacio Rojas and C. Bosch

Improving Metagenonomic Assemblies Through Data Partitioning: a GC content approach

Fabio Malcher Miranda, Cassio Batista, Artur Silva, Jefferson Morais, Nelson Neto and Rommel Ramos
Friday April 27, 2017

### Session A.12: Generation, Management and Biological Insights from Big Data

**Chairman: Dr. Anagha Joshi**

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### Session B.12: Challenges and advances in measurement and self-parametrization of complex biological systems

**Chairman: Dipl-Ing. Jan Urban, Ph.D.**

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PLENARY LECTURE:
Prof. Joaquin Dopazo
Fundacion Progreso y Salud, Clinical Bioinformatics Research Area, Sevilla, Spain

Session A.13: Modelling biological and biomedical processes

Chairman: Dr. Sabrina Silveira and Dr. Corey Hudson (tentative)
An Interactive Strategy to Visualize Common Subgraphs in Protein-Ligand Interaction
Alexandre V. Fassio, Charles Abreu Santana, Fabio R Cerqueira, Carlos H. Da Silveira, João P. R. Romanelli, Raquel C. Melo-Minardi and Sabrina Silveira

Improving the performance of pathway extraction methods by infeasibilities removal
Jose F Hidalgo, Francisco Guil and Jose M Garcia

Development of multi-agent technology for prediction of the "structure-property" dependence of drugs on the basis of modified algorithms of artificial immune systems
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Chairman: Dr. Maria Taboada and Dr. Ibticeme Sedjelmaci (tentative)
On the use of Decision Trees based on Diagnosis and Drug Codes for Analyzing Chronic Patients
Cristina Soguero-Ruiz, Ana Alberca Diaz-Plaza, Pablo De Miguel Bohoyo, Javier Ramos-Lopez, Manuel Rubio-Sanchez, Alberto Sanchez-Campos and Inmaculada Mora-Jimenez

Some False ECG Waves Detections Revised by Fractal Dimensions
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Eye Aspect Ratio based Blink Rate detection and its potential use for Parkinsons Disease
Augusto Garcia-Agundez, Robert Konrad, Polona Caserman, Stefan Goebel and Tobias Ochs

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Chairman: Dr. Nora Kováts and Dr. Diego Hernán Peluffo Ordóñez
Chloroplast genomes exhibit eight-cluster structuredness and mirror symmetry
Michael Sadowsky, Maria Senashova and Andrew Malyshev

Are Radiosensitive and Regular Response Cells Homogeneous in their Correlations Between Copy Number State and Surviving Fraction After Irradiation?
Joanna Tobiasz, Najla Al-Harbi, Sara Bin Judia, Salma Majid, Ghazi Alsbeih and Joanna Polanska
Prediction of functional connections from genomic distances in cyanobacteria
Jose I. Labella, Javier Espinosa, Francisco Rodriguez-Mateo and Asuncion Contreras

Session B.14: Biomedicine/Bioinformatics for healthcare and diseases

Chairman: Dr. Zarina Samigulina (tent.) and Dr. Daniel Castillo

Web based application for accurately classifying cancer type from microarray gene expression data using a support vector machine learning algorithm
Shrikant Pawar

Drug-Target Interaction Prediction Using Short-Linear Motifs
Wenziao Xu, Yixun Li, Luis Rueda and Alioune Ngom

In vitro analysis of polymeric microspheres containing human vocal fold fibroblasts for regeneration of vocal fold lamina propria
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SARAEasy: A mobile app for Cerebellar Syndrome Quantification and Characterization
Haitham Maarouf, Vanessa Lopez, Maria J Sobrido, Diego Martinez and Maria Taboada

Session A.15: Virtual Presentation

Chairman: Dr. Olga Valenzuela and Dr. Ignacio Rojas

Gene-Gene Interaction Analysis: Correlation, Relative Entropy and Rough Set Theory Based Approach
Sujay Saha, Sukriti Roy, Anupam Ghosh and Kashi Nath Dey

A Transferable Belief Model decision support tool over complementary clinical conditions
Abderraouf Hadj Henni, David Pasquier and Nacim Betrouni

Inspecting the Role of PI3K/AKT Signaling Pathway in Cancer Development Using an In Silico Modeling and Simulation Approach
Pedro Pablo Gonzalez-Perez and Maura Cardenas-Garcia

Disease Control at Global Mass Gatherings: Modeling Spread of Infectious Diseases at the Arrival Stage of Hajj
Sultanah Alshammari and Armin Mikler

Prediction of Lung Cancer : Data Mining on Cohort DB of National Health Insurance Service in Korea
Heechel Kim

Classification of Breast Cancer Histopathological Images using KAZE features and Bag of Features
Daniel Sanchez Morillo, Jesus Gonzalez and Julio Ortega
Integration of omic strategies for biomarkers discovery and to elucidate the molecular mechanisms underlying Brugada Syndrome

Domenica Scumaci, Antonio Oliva, Antonio Concolino, Antonio Curcio, Claudia Vincenza Fiumara, Laura Tammé, Oscar Campuzano, Vincenzo Pascali, Monica Coll, Anna Iglesias, Paola Berne, Gavino Casu, Pietroantonio Ricci, Ciro Indolfi, Josep Brugada, Ramon Brugada and Giovanni Cuda

GPU-Low-Energy Tracking of the Left Ventricle in the Cloud

Sidi Ahmed Mahmoudi, Mohammed Ammar, Mohammed Amin Belarbi and Amine Abbou

Genomic Solutions to Hospital-Acquired Bacterial Infection Identification

Max Garzon and Duy Pham