IWBBIO-2022
COVID-19 Workshop

PROGRAM

27th-30th JUNE, 2022
Gran Canaria (SPAIN)

IWBBIO & COVID-19 W. Program

Monday, June 27th, 2022	
18:30-20:00	**REGISTRATION DESK** ***(start at 18:30h but it is opened during all the conference)***
18:30-20:00	**Upload the presentations to the room's computer (in case you haven't sent them by email).**

NOTES:

- All **Sessions A** will be held in Hotel Lopesan Villa del Conde Resort. They are **face-to-face sessions**, and they will also be shared /on-line by Zoom. The **plenary lectures** are in **Session A.**

- All **Sessions B** will be held on-line (virtual) using Zoom.

Session A: Located in the last floor of the main building

Tuesday, June 28, 2022		
9:00	**REGISTRATION DESK** ***(start at 9:00h but it is opened during all the conference)***	
	All **Sessions A: Oral face-to-face sessions**. All **Sessions B:** Oral (will be held on-line by Zoom)	
9:00-10:00	**Session A.1: Computational Proteomics (Part. I)**	
10:05- 11:20	**Session A.2: Biomedical Computing (Part. I)**	**Session B.1: Bioinformatics and Biomedical Engineering**
11:20-12:00	**COFFEE BREAK**	
12:00-13:00	**Session A.P1: Opening & Plenary Lecture.** **Prof. FangXiang Wu** **University of Saskatchewan, Canada**	
13:05-14:00	**Session A.3: Feature Selection, Extraction, and Data Mining in Bioinformatics: Approaches, Methods and Adaptations**	**Session B.2: Biomedicine. New Advances and Applications**
14:00-16:00	**REST BREAK**	
16:00-17:00	**Session A.4: Computational Systems for Modelling Biological Processes (Part. I)**	
17:05-18:20	**Session A.5: Image Visualization and Signal Analysis in Biomedical Applications**	
18:25-19:25	**Session A.P2: Plenary Lecture.** **Prof. Gabriel Wainer** **Systems and Computer Engineering Carleton University, Canada**	

Wednesday, June 29th, 2022		
9:00	**REGISTRATION DESK** ***(start at 9:00h but it is opened during all the conference)***	
	All **Sessions A: Oral <u>face-to-face sessions</u>**. All **Sessions B:** Oral (will be held on-line by Zoom)	
9:00-10:00	**Session A.6: Machine Learning in Bioinformatics (Part. I)**	
10:05- 11:20	**Session A.7: COVID-19. Bioinformatics and Biomedicine**	
11:20-12:00	**COFFEE BREAK**	
12:00-13:00	**Session A.P3: Plenary Lecture.** **Prof. Christophe Guyeux** **Universite de Bourgogne Franche-Comté**	
13:05-14:00	**Session A.8: Computational Systems for Modelling Biological Processes (Part. II)**	**Session B.3: Computational Systems for Modelling Biological Processes**
14:00-16:00	**REST BREAK**	
16:00-17:00	**Session A.9: Next generation sequencing and sequence analysis**	**Session B.4: Biomedical Engineering**
17:05-18:25	**Session A.10: E-Health and Biomedical Engineering**	
18:25-19:30	**Session A.11: POSTER SESSION**	
21:00	**GALA DINNER** **Hotel Lopesan Baobab 5*** **(15 minutes walking from Hotel Lopesan Villa del Conde Resort)**	

Thursday, June 30th, 2022		
9:00	**REGISTRATION DESK** ***(start at 9:00h but it is opened during all the conference)***	
	All **Sessions A: Oral face-to-face sessions**. All **Sessions B:** Oral (will be held on-line by Zoom)	
9:00-10:00	**Session A.12: Biomedical Computing (Part. II)**	
10:05- 11:20	**Session A.13: Computational Proteomics (Part. II)**	
11:20-12:00	**COFFEE BREAK**	
12:00-13:00	**Session A.P4: Plenary Lecture.** **Prof. Jean-marc Schwartz** **University of Manchester, United Kingdom**	
13:05-14:00	**Session A.14: Machine Learning in Bioinformatics (Part. II)**	

IWBBIO 2022 PROGRAM

Monday, June 27th 2022

(18:30-20:00) Registration Desk

(18:30-20:00) Upload the presentations to the room's computer (in case you haven't sent them by email).

Tuesday, June 28th 2022

(9:00-10:00) Session A.1: Computational Proteomics (Part. I)

Chairman: Dr. Augusto Anguita-Ruiz and Dr. Fostier Jan

OnTheFly2.0: a platform for the automated biomedical entity recognition, network and functional enrichment analysis from multiple documents **(Ref: *72*)**

Fotis Baltoumas, Sofia Zafeiropoulou, Evangelos Karatzas, Savvas Paragkamian, Foteini Thanati, Ioannis Iliopoulos, Aristeides Eliopoulos, Reinhard Schneider, Lars Juhl Jensen, Evangelos Pafilis and Georgios Pavlopoulos

Iso-mukaadial acetate and ursolic acid acetate bind to Plasmodium falciparum heat shock protein 70: towards targeting parasite protein folding pathway **(Ref: *73*)**

Francis Opoku, Penny Govender, Ofentse Pooe, Addmore Shonhai and Mthokozisi Simelane

A distance geometry procedure using the Levenberg-Marquardt algorithm and with applications in biology but not only **(Ref: *76*)**

Douglas Gonçalves and Antonio Mucherino

(10:05- 11:20) Session A.2: Biomedical Computing (Part. I)

Chairman: Dr. Antonio Mucherino and Dr. Georgios Pavlopoulos

Linear Predictive Modeling for Immune Metabolites Re-lated to Other Metabolites **(Ref: *97*)**

Jana Schwarzerova, Iro Pierides, Jana Musilova, Karel Sedlář and Wolfram Weckwerth

Comparisons of Knowledge Graphs and EntityExtraction in Breast Cancer Subtyping Biomedical Text Analysis **(Ref: *128*)**

Jean Davidson, Grif Hawblitzel, Mcclain Kressman, Andrew Doud, Harsha Lakshmankuma, Ella Thomas, Paul Kim, Ava Jakusovszky and Paul Anderson

Gene Expression Profiles of Visceral and Subcutaneous Adipose Tissues in Children with Overweight or Obesity: the KIDADIPOSEQ Project **(Ref: *130*)**

Mireia Bustos-Aibar, Augusto Anguita-Ruiz, Álvaro Torres-Martos, Jesús Alcalá-Fdez, Francisco Javier Ruiz-Ojeda, Marjorie Reyes-Farias, Andrea Soria-Gondek, Laura Herrero, David Sánchez-Infantes and Concepción María Aguilera

Approximate pattern matching using search schemes and in-text verification **(Ref: *121*)**

Luca Renders, Lore Depuydt and Jan Fostier

The Future of SARS-CoV-2 Vaccination **(Ref: *190*)**

Martin Bachmann

(10:05- 11:20) Session B.1: Bioinformatics and Biomedical Engineering

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Chairman: Dr. Francisco Ortuño

Assessment of Dromedary Camels Genomic Diversity from the Arabian Peninsula Using Whole Genome Sequence Data **(Ref: *19*)**

Hussain Bahbahani, Arwa Afana and Suzanne Al-Bustan

PET-Neuroimaging Neuropsychological Study for Early Cognitive Impairement in Parkinson's Disease **(Ref: *30*)**

Sergey Lytaev

Integrative analysis of ovarian serious adenocarcinoma to understand cancer network biology **(Ref: *55*)**

Sahar Qazi and Khalid Raza

Discovering potential drugs for inhibiting interaction of hACE2 receptor and spike protein across multiple SARS-CoV-2 variants of concern **(Ref: *71*)**

Animesh Awasthi, Adarsh Singh and Riddhiman Dhar

Supervised Cell Type Heterogeneity Detection in Single-cell RNA-seq Data **(Ref: *2*)**
Akram Vasighizaker, Sheena Hora, Yash Trivedi and Luis Rueda

(12:00-13:00) Opening Ceremony. Plenary Talk: Prof. FangXiang Wu

College of Engineering, University of Saskatchewan, Canada
P.Eng, SMIEEE. Professor, Department of Mechanical Engineering,
Department of Computer Science and Division of Biomedical Engineering .
Title of the presentation: Computational Intelligence for Drug Repositioning

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(13:05-14:00) Session A.3: Feature Selection, Extraction, and Data Mining in Bioinformatics: Approaches, Methods and Adaptations

Chairman: Dr. Karel Sedlar

Can we detect T cell receptors from long-read RNA-Seq data? **(Ref: *161*)**
Justyna Mika, Serge Candéias, Christophe Badie and Joanna Polanska

Spolmap: an enriched visualization of CRISPR diversity **(Ref: *164*)**
Christophe Guyeux, Guislaine Refrégier and Christophe Sola

Sperm-cell detection using YOLOv5 architecture **(Ref: *171*)**
Michal Dobrovolný, Jakub Benes, Ondrej Krejcar and Ali Selamat

(13:05-14:00) Session B.2: Biomedicine. New Advances and Applications

Chairman: Dr. Antonio Pinti

Covid-19 Gender Performativity: A Study of the Global South **(Ref: *29*)**
Kanu Priya, Kanu Priya and Kanu Priya

Advanced Incremental Attribute Learning Clustering Algorithm for Medical and Healthcare Applications **(Ref: *66*)**
Siwar Gorrab, Fahmi Ben Rejab and Kaouther Nouira

Bone health parameters in young adult female handball players **(Ref: *102*)**

Elie Maliha, Anthony Khawaja, Hechmi Toumi, Antonio Pinti and Rawad El Hage

A Deep Learning Framework for the Prediction of Conversion to Alzheimer Disease **(Ref: *153*)**

Sofia Ostellino, Alfredo Benso and Gianfranco Politano

(16:00-17:00) Session A.4: Computational Systems for Modelling Biological Processes (Part. I)

Chairman: Dr. Roberta Bardini and Dr. Justyna Mika

Visualizing 3D multilayered networks interactively with Arena3Dweb **(Ref: *22*)**

Evangelos Karatzas, Fotis Baltoumas and Georgios Pavlopoulos

Receptor Tyrosine Kinase KIT: A New Look for an Old Receptor **(Ref: *53*)**

Julie Ledoux and Luba Tchertanov

Human Vitamin K Epoxide Reductase as a Target of its Redox Protein **(Ref: *58*)**

Julie Ledoux, Maxim Stolyarchuk and Luba Tchertanov

GAGAM: a genomic annotation-based enrichment of scATAC-seq data for Gene Activity Matrix **(Ref: *70*)**

Lorenzo Martini, Roberta Bardini, Alessandro Savino and Stefano Di Carlo

(17:05-18:20) Session A.5: Image Visualization and Signal Analysis in Biomedical Applications

Chairman: Dr. Jose Maria Carazo Garcia

Initial prototype of low-cost stool monitoring system for early detection of diseases **(Ref: *89*)**

José Luis López Ruiz, David Díaz Jiménez, Alicia Montoro Lendínez and Macarena Espinilla Estévez

On the Use of Explainable Artificial Intelligence for the Differential Diagnosis of Pigmented Skin Lesions **(Ref: *108*)**

Sandro Hurtado, Hossein Nematzadeh, José García-Nieto, Miguel-Angel Berciano-Guerrero and Ismael Navas-Delgado

Estimating frontal body-landmark from thermal sensors using Residual Neural Networks **(Ref: *138*)**

Aurora Polo-Rodriguez, Marcos Lupion, Pilar Martinez Ortigosa and Javier Medina-Quero

Macromolecular flexibility and the experimental determination of conformational landscapes in the context of 3DBioinformatics **(Ref: *184*)**

David Herreros, James Krieger, Carlos Oscar S.Sorzano and Jose Maria Carazo

Integrating in-vivo data in CFD simulations and in in-vitro experiments of the hemodynamic in healthy and pathologic thoracic aorta **(Ref: *118*)**

Alessandro Mariotti, Emanuele Gasparotti, Emanuele Vignali, Pietro Marchese, Simona Celi and Maria Vittoria Salvetti

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(18:25-19:25) Plenary Talk: Prof. Gabriel Wainer

Systems and Computer Engineering Carleton University, Canada

Editor in Chief– SIMULATION (SCS), ACM Distinguished Speaker

Title of the presentation: Cellular Models in Buildings to study the indoor spread of COVID-19

Wednesday, June 29th, 2022

(9:00-10:00) Session A.6: Machine Learning in Bioinformatics (Part. I)

Chairman: Dr. Caroline König and Dr. Ismael Navas-Delgado

A semi-supervised graph deep neural networks for automatic protein function annotation **(Ref: *103*)**

Akrem Sellami, Sabeur Aridhi, Salvatore Tabbone and Marie-Dominique Devignes

Guidelines on human multi-omics data pre-processing for predictive purposes using Machine Learning: a case study in childhood obesity. **(Ref: *135*)**

Augusto Anguita-Ruiz, Alvaro Torres-Martos, Mireia Bustos-Aibar, Sofia CÁmara-SÁnchez, Rafael AlcalÁ, ConcepciÓn M. Aguilera and Jesus AlcalÁ-Fdez

Feature Density as an uncertainty estimator method in the binary classification mammography images task for a supervised Deep Learning model **(Ref: *145*)**

Ricardo Javier Fuentes-Fino, Saúl Calderón-Ramírez, Enrique Dominguez, Ezequiel López-Rubio, Marco A. Hernandez-Vasquez and Miguel A. Molina-Cabello

Data quality enhancement for machine learning on wearable ECGs **(Ref: *152*)**

Balazs Molnar, Laszlo Micsinyei, Gabor Perlaki, Gergely Orsi, Laszlo Hejjel, Jozsef Janszky, Tamas Doczi, Norbert Laky and Akos Tenyi

(10:05-11:20) Session A.7: COVID-19. Bioinformatics and Biomedicine

Chairman: Dr. Alessandro Mariotti and Dr. Armin Hadziahmetovic

Information sources and trust in information sources as predictors of COVID-19 conspiracy theories and compliance with COVID-19 measures **(Ref: *93*)**

Ana Jovančević, Izabel Cvetković and Nebojša Milićević

Use of network-based models for epidemic prediction and mitigation **(Ref: *99*)**

Jean-Marc Schwartz and Helena Saunders

A Deep Learning-based method for uncovering GPCR ligand-induced conformational states using interpretability techniques. **(Ref: *150*)**
Mario A. Gutiérrez-Mondragón, Caroline König and Alfredo Vellido

Collecting SARS-CoV-2 encoded miRNAs via text mining **(Ref: *170*)**
Alexandra Schubö, Armin Hadziahmetovic, Markus Joppich and Ralf Zimmer

Optimal Chair Location through a Maximum Diversity Problem Genetic Algorithm Optimization **(Ref: *115*)**
Rubén Ferrero Guillén, Javier Díez-González, Paula Verde, Alberto Martínez-Gutiérrez, José Manuel Alija and Rubén Álvarez

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(12:00-13:00) Plenary Talk: Prof. Christophe Guyeux

Universite de Bourgogne Franche-Comté
Full Professor. University of Franche-Comté, UFC, Institut FEMTO-ST
Title of the presentation: 100,000 Mycobacterium tuberculosis genomes, what for?

(13:05- 14:00) Session A.8: Computational Systems for Modelling Biological Processes (Part. II)

Chairman: Dr. Michal Marczyk

A methodology for co-simulation-based optimization of biofabrication protocols **(Ref: *91*)**
Leonardo Giannantoni, Roberta Bardini and Stefano Di Carlo

In Pursuit of a 3D Multicellular Simulation Layer for the Synthetic Biology Computer Assisted Design Infobiotics Workbench Suite **(Ref: *92*)**
Richard Matzko, Savas Konur and Laurentiu Mierla

Bioinformatic workflow to analyze behavioral video recordings **(Ref: *117*)**
Giselda Cabral Pereira, Carlos García Pera, Juan López López, Jaime Gonçalves Sánchez, Jose Antonio C. de Oliveira, Norberto Garcia-Cairasco and Dolores E. López

Comparative study of synthetic bulk RNA-seq generators **(Ref: *119*)**
Felitsiya Shakola, Dean Palejev and Ivan Ivanov

(13:05- 14:00) Session B.3: Computational Systems for Modelling Biological Processes

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Chairman: Dr. Francisco Ortuño

Strong Prevalence of the Function over Taxonomy in Human tRNA Genes **(Ref: *68*)**
Yana Nedorez and Michael Sadovsky

Sensitivity Analysis of Adhesion in Computational Model of Elastic Cluster **(Ref: *127*)**
Alzbeta Bohinikova, Iveta Jancigova, Ivan Cimrak and James J. Feng

Towards XAI: Interpretable Shallow Neural Network Used to Model HCP's fMRI Motor Paradigm Data **(Ref: *140*)**
José Diogo Marques dos Santos and José Paulo Marques dos Santos

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(16:00-17:00) Session A.9: Next generation sequencing and sequence analysis

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Chairman: Dr. Carlos García

Comparison of Stranded and Non-Stranded RNA-Seq in Predicting Small RNAs in a Non-Model Bacterium **(Ref: *116*)**
Karel Sedlar and Ralf Zimmer

Investigating sources of zeros in 10x single-cell RNAseq data **(Ref: *125*)**
Hanna Slowik, Joanna Zyla and Michal Marczyk

Towards Lossless Approximate Pattern Matching on Pan-genome de Bruijn Graphs **(Ref: *166*)**
Lore Depuydt, Luca Renders, Thomas Abeel and Jan Fostier

Correlation clustering analysis of quality metrics obtained from clinical next generation sequencing, alignment, and variant calling pipeline outputs **(Ref: *136*)**
Miguel Amezquita, Christophe Roos, Jukka Matilainen and Andrey Melnyk

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(16:00-18:20) Session B.4: Biomedical Engineering

Chairman: Dr. Francisco Ortuño

Thermal effects of manual therapy in low back pain: a pilot study **(Ref: *59*)**

Andrea Rosales-Hernandez, Daniela Vigueras-Becerril, Arely G. Morales-Hernandez, Sandra M. Chavez-Monjaras, Luis Morales-Hernandez and Irving Cruz-Albarran

Comparative Analysis of the Spatial Structure Chloroplasts and Cyanobacteria Photosynthetic Systems I and II Genes **(Ref: *98*)**

Michael Sadovsky and Maria Senashova

Unsupervised Classification of Some Bacteria with 16SRNA Genes **(Ref: *109*)**

Michael Sadovsky, Vladislav Abramov, Andrey Morgun, Irina Larionova and Agnia Teterleva

KFinger: Capturing Overlaps between Long Reads by Using Lyndon Fingerprints **(Ref: *123*)**

Paola Bonizzoni, Alessia Petescia, Yuri Pirola, Raffaella Rizzi, Rocco Zaccagnino and Rosalba Zizza

A Convolutional Neural Network model for SPECT Myocardial Perfusion Images Classification **(Ref: *188*)**

Nikolaos Papandrianos, Anna Feleki and Elpiniki Papageorgiou

(17:05-18:25) Session A.10: E-Health and Biomedical Engineering

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Chairman: Dr. Miguel Amezquita and Dr.Milena Georgieva Vasileva

Modern approaches for cancer treatment **(Ref: *111*)**

Milena Georgieva, Natalia Krasteva, Dessislava Staneva, Bela Vasileva, Miloshev George, Snezhana Bakalova and Jose Kaneti

Potential candidates for cancer therapy **(Ref: *112*)**

Trayana Kamenska, Miroslav Abrashev, Milena Georgieva, Charilaos Xenodochidis, Snezhana Bakalova, Jose Kaneti and Natalia Krasteva

Migrating CUDA to oneAPI: A Smith-Waterman Case Study **(Ref: *124*)**

Manuel Costanzo, Enzo Rucci, Carlos Garcia Sanchez, R. Marcelo Naiouf and Manuel Prieto-Matias

Smart Watch for Smart Health Monitoring: A Literature Review **(Ref: *142*)**

Avnish Singh Jat and Tor-Morten Grønli

A Service for Flexible Management and Analysis of Heterogeneous Clinical Data **(Ref: *177*)**

Sandro Hurtado Requena, José García-Nieto and Ismael Navas-Delgado

(18:25-19:30) Session A.11: POSTER SESSION

Chairman: Dr. Ignacio Rojas and Dr. Francisco Ortuño

Molecular insights of Acetyl-CoA synthetase in Acetobacter pasteurianus and finding toxic free agonist molecules through Co-Factor mimicking and ADME/T analysis. **(Ref: *20*)**

Vishnu Priya Selvaraju, Bhavani Ramya Sundaresan and Karthiayani Arulselvam

The oncolytic activity of human respiratory syncytial virus (HRSV) in tumor cell lines **(Ref: *21*)**

Ibrahim Aziz

Risk of Corona virus disease 2019 (COVID-19) among spectacles wearing population of Northern India **(Ref: *23*)**

Amit Kumar Saxena

Iconographic Analysis of the Visual Communication Genre on Covid-19 in Nigeria **(Ref: *24*)**

Aondover Eric Msughter

The pattern of health insurance economic resilience in the Covid 19 pandemic shock **(Ref: *25*)**

Erfan Kharazmi, Shima Bordbar and Hanie Gholampoor

Role of Cloud Computing in Covid-19 Outbreak **(Ref: *26*)**

Raju Singh

Optimization of Adaptive Statistical Iterative Reconstruction for Radiation Dose Reduction and Improving Image Quality of Chest CT Scan in COVID-19 Patients **(Ref: *27*)**

Mohammad Reza Choopani and Iraj Abedi

Evaluating performance of regression and classification models using known lung carcinomas prognostic markers **(Ref: *28*)**

Shrikant Pawar, Chandrajit Lahiri and Karuna Mittal

Increased depression during COVID-19 lockdown associated with food insecurity and antiretroviral non-adherence among people living with HIV in Uganda **(Ref: *34*)**

Glenn Wagner

In-silico nucleotide and protein analyses of S-gene region in selected zoonotic coronaviruses reveal conserved domains and evolutionary emergence with trajectory course of viral entry from SARS-CoV-2 genomic data **(Ref: *36*)**

Adejoke Olukayode Obajuluwa, Pius Abimbola Okiki, Tiwalola Madoc Obajuluwa and Olakunle Bamikole Afolabi

Measurable Difference Between Malignant and Benign Tumor of the Thyroid Gland Recognizable Using Echogenicity Index in Ultrasound B-MODE Imaging: An Experimental Blind Study **(Ref: *54*)**

Jiří Blahuta, Tomas Soukup, Jan Lavrincik, Lukas Pavlik and Zuzana Repaska

Knowledge Update on the Economic Evaluation of Pacemaker Telemonitoring Systems **(Ref: *56*)**

Antonio Lopez-Villegas, Cesar Leal-Costa and Daniel Catalan-Matamoros

Towards automatization for bone tissue segmentation processes **(Ref: *60*)**

Álvaro Pérez Sala, Rafael Pelaez, Jorge Martínez-Iñiguez and Ignacio M. Larrayoz

ECM compounds and adhesion molecules are down-regulated by sterculic acid to reduce tumor cell migration **(Ref: *61*)**

Rafael Pelaez, Alvaro Perez, Rodrigo Ochoa, Ana Pariente and Ignacio Larrayoz

Translational challenges of biomedical machine learning solutions in clinical and laboratory settings **(Ref: *67*)**

Carlos Vega, Miroslav Kratochvil, Venkata Satagopam and Reinhard Schneider

A systematic Review of Economic Evaluations of Teledermatology Services versus Conventional Monitoring at Hospital **(Ref: *69*)**

Antonio Lopez-Villegas, Remedios Lopez-Liria and Maria A. Valverde-Martinez

Dysregulation of RNA expression profile and association with genomic copy number variants in coronary artery disease **(Ref: *74*)**

Nicoletta Di Giorgi, Arthur J.H.A. Scholte, Moritz Schütte, Romina D'Aurizio and Silvia Rocchiccioli

Relative drug-target residence time approximation by -random acceleration molecular dynamics (RAMD) **(Ref: *79*)**

Magdalena Ługowska and Marcin Pacholczyk

COVID-19 Severity Classification using a Hierarchical Classification Deep Learning Mode **(Ref: *80*)**

Sergio Ortiz, Juan Carlos Morales, Fernando Rojas, Olga Valenzuela, Luis Javier Herrera and Ignacio Rojas

DrugComb and SynergyFinder Plus: Informatics Tools for Harmonization, Interpretation, and Annotation of Drug Combination Data **(Ref: *94*)**

Shuyu Zheng, Jehad Aldahdooh, Wenyu Wang, Tolou Shadbahr, Alina Malyutina, Yinyin Wang, Jie Bao, Dalal Aldahdooh, Ziaurrehman Tanoli, Alberto Pessia and Jing Tang

Optical inspection of the impact of polyethylene microplastics (PEMPs) on lentil seed germination using Biospeckle Optical Coherence Tomography and morphological analysis of the seedling growth **(Ref: *110*)**

Yakdehige Sanath Kumara De Silva, Uma Maheswari Rajagopalan, Danyang Li and Hirofumi Kadono

Finding significantly enriched cells in single-cell RNA sequencing by single-sample approaches **(Ref: *113*)**

Anna Mrukwa, Michal Marczyk and Joanna Zyla

Rapid Assessment of the Effect of Acid Mine Drainage (AMD) on Soybean by Biospeckle Optical Coherence Tomography (bOCT) **(Ref: *114*)**

Danyang Li, Uma Maheswari Rajagopalan, Y. Sanath K. De Silva and Hirofumi Kadono

A fractional-order compartmental model of vaccination for COVID-19 with the fear factor **(Ref: *129*)**

Amar Nath Chatterjee, Bashir Ahmad and Ahmed Alsaedi

Disalicyloyl curcumin as a novel DNA polymerase inhibitor for the Marek's disease herpesvirus: a virtual screening study **(Ref: *137*)**

Abdelmonaem Messaoudi and Cherif Aziza

Identification of essential enzymes as potential drug targets in Mycobacterium tuberculosis using metabolic pathways analysis and epitope mapping **(Ref: *141*)**

Dian Ayu Eka Pitaloka, Dwi Syah Fitra Ramadhan and Arfan Arfan

Evaluation of arterial stiffness in convalescents after COVID-19 infection using non-invasive photopletysmography method: a pilot study **(Ref: *149*)**

Izabela Szołtysek-Bołdys, Wioleta Zielińska-Danch, Danuta Łoboda, Elżbieta Paradowska-Nowakowska, Izabela Dąbrowska, Krzysztof S. Gołba and Beata Sarecka-Hujar

Data Transformation for Clustering Utilization for Feature Detection in MS **(Ref: *154*)**

Vojtech Barton and Helena Skutkova

To assess emerging vector-borne diseases by biodiversity loss and transmission dynamics and study the human health hazards and prevention **(Ref: *155*)**

Waikhom Somraj Singh, Soumen Mukherjee, Debarshi Mukherjee and Kuntal Manna

Directional reflectance - the future of solid drug stability research? - a pilot study **(Ref: *157*)**

Michał Meisner, Beata Szulc-Musioł and Beata Sarecka-Hujar

Exploration of the Action Network and Potential Mechanism of Xiaochuanning Granule in the Prevention and Treatment of Psychological Stress Asthma Based on Network Pharmacology **(Ref: *159*)**

Xuefeng Gong, Qiuyi Chen Chen, Mingsheng Lv, Dan Hou, Shuaiyang Huang, Ruifeng Jin and Hongsheng Cui

Applicability of American College of Radiology Appropriateness Criteria Decision-making model for acute appendicitis diagnosis in children **(Ref: *163*)**

Ozum Tuncyurek, Koray Kadam, Berna Uzun and Dilber Uzun Ozsahin

Increasing the quality of Optipharm's predictions by including flexibility properties of the molecules **(Ref: *165*)**

Savíns Puertas-Martín, Juani Lopez Redondo, Ester Martin Garzon, Horacio Pérez-Sánchez and Pilar M. Ortigosa

Radiomic-based lung nodule classification in low-dose Computed Tomography **(Ref: *167*)**

Wojciech Prazuch, Malgorzata Jelitto-Gorska, Agata Durawa, Katarzyna Dziadziuszko and Joanna Polanska

Segmentation of Brain MR Images using Quantum Inspired Firefly Algorithm with Mutation **(Ref: *172*)**

Alokeparna Choudhury, Sourav Samanta, Sanjoy Pratihar and Oishila Bandyopadhyay

Effectiveness of nano-Hydroxyapatite in Reducing Bleaching Related Tooth Sensitivity: A Systematic Review Meta-Analysis **(Ref: *173*)**

Zainab Haji, Shizrah Jamal and Robia Ghafoor

Periodontal splinting for dentoalveolar fracture in Covid-19 Era using Ribbond under rubber dam isolation **(Ref: *174*)**

Zainab Haji and Dinaz Gandhi

A cognitive behavioral perspective about awareness and quality of management of knee osteoarthritis: A cross-sectional survey **(Ref: *178*)**

Abdulrahman Khormi, Abdulrahman Alenezi, Abdulsalam Alharbi, Abdulaziz Baslem, Faisal Hijazi and Farraj Alshalwi

Efficient analysis of big genomic data sets on a common PC **(Ref: *179*)**

Armin Schmitt

The Value of Computer-Aided Methods in The Diagnosis of Appendicitis: B Mode vs Shear-wave Ultrasound **(Ref: *180*)**

Ozum Tuncyurek, Mustapha Mubarak Taiwo, Berna Uzun, Cihat Yildirim and Dilber Uzun Ozsahin

The effect of intense exercise on muscle power and functional abilities of obese people **(Ref: *182*)**

Nourelyakine Lakhdar, Lamri Driss and Moulay Laarbi Ouahidi

Gene Expression Tools from a Technical Perspective: current approaches and alternative solutions for the KnowSeq suite **(Ref: *183*)**

Daniel Castillo-Secilla, Daniel Redondo-Sanchez, Luis Javier Herrera, Ignacio Rojas and Alberto Guillen

Cell free fetal (cff) DNA assessment using Y- chromosome specific sequences and amplicon NGS of targeted SNPs for possible implementation in non-invazive prenatal testing of common chromosomal aneuploidies **(Ref: *185*)**

Radek Vodicka, Jana Bohmova and Radek Vrtel

AI driven Drug Repositioning platform **(Ref: *189*)**

Zsófia Czudor

Multi-omics workflow for the identification of discriminant markers associated with Trypanosoma cruzi populations **(Ref: *191*)**

Hayat Hage, Amy Hesketh, May Taha, Yannick Charretier, Fanny Escudié, Francisco Olmo, Adrien Saliou, Segolene Arnoux, John Kelly, Gilles Courtemanche, Eric Chatelain and Josephine Abi Ghanem

Thursday, June 30th, 2022

(9:00-10:00) Session A.12: Biomedical Computing (Part. II)

Chairman: Dr. Francisco Ortuño

Personalized Virtual Model of the Patient´s Eye for Comprehensive, Rational Decision-Making in Refractive Surgery **(Ref: *139*)**
Marina José Martínez, Yolanda Sabuco, Ana Belén Plaza Puche, David Pablo Piñero, Francesco Versaci, Jesper Hjortdal, Joaquim Murta and Jorge Luciano Alió

The Role of Astrocytes in Alzheimer's Disease Progression **(Ref: *147*)**
Swadesh Pal and Roderick Melnik

Effects of random inputs and short-term synaptic plasticity in a LIF conductance model for working memory applications **(Ref: *156*)**
Thoa Thieu and Roderick Melnik

Single-channel EEG Detection of REM SleepBehaviour Disorder: the Influence of REM and Slow Wave Sleep **(Ref: *90*)**
Irene Rechichi, Federica Amato, Alessandro Cicolin and Gabriella Olmo

(10:05-11:20) Session A.13: Computational Proteomics (Part. II)

Chairman: Dr. Roderick Melnik

Fuzzy-inference system for isotopic envelope identification based on analysis of the spatial distribution of components in Mass Spectrometry Imaging **(Ref: *120*)**
Anna Glodek

SubcellulaRVis: a web-based tool to simplify and visualise subcellular compartment enrichment. **(Ref: *143*)**
Joanne Watson, Chiara Francavilla and Jean-Marc Schwartz

How to compare various clustering outcomes? Metrices to investigate breast cancer patient subpopulations based on proteomic profiles **(Ref: *168*)**
Joanna Tobiasz and Joanna Polanska

Autism spectrum disorder: from systems biology to drug targets **(Ref: *169*)**
Blahuta

(12:00-13:00) Plenary Talk: Prof. Jean-marc Schwartz

University of Manchester, United Kingdom
Division of Evolution and Genomic Sciences (L5). Division of Evolution, Infection and Genomics.

Title of the presentation: Integration of network and omics analyses for disease stratification

(13:05- 14:00) Session A.14: Machine Learning in Bioinformatics (Part. II)

Chairman: Dr. Armin Schmitt

PathWeigh - Quantifying the Behavior of Biochemical Pathway Cascades **(Ref: *35*)**
Dani Livne and Sol Efroni

Iterative Clustering for Differential Gene Expression Analysis **(Ref: *148*)**
Olga Georgieva

Comparison of batch effect removal methods for high dimensional mass cytometry data **(Ref: *162*)**
Aleksandra Suwalska, Nelita du Plessis-Burger, Gian Van der Spuy and Joanna Polanska

Leveraging multi-omics integration to improve the diagnostic power of mitochondrial diseases **(Ref: *181*)**
Justine Labory and Silvia Bottini

Virtual Session

Chairman: Dr. Ignacio Rojas

Automated TTC image-based analysis of mouse brain lesions **(Ref: *1*)**

Gerasimos Damigos, Konstantinos Moustakas, Kostas Pantos, Iordanis Mourouzis, Athanasios Lourbopoulos and Evangelia I. Zacharaki

Reconfigurable Arduino Shield for Biosignal Acquisition **(Ref: *32*)**

Leozítor Floro de Souza, Fábio Iaione and Shih Ting Ju

Prevalence of COPD Concerning Severity of COVID-19 Infection: A Short Systematic Review and Meta-analysis **(Ref: *33*)**

Yousef Alluhaymid

Exhaled Breath Condensate study for biomarkers discovery **(Ref: *63*)**

Stephanos Patsiris, Themistoklis Exarchos and Panagiotis Vlamos

Calculation of DNA strand breaks by types of electron interaction with Monte Carlo simulation **(Ref: *64*)**

Youssef Lamghari and M'Hamed Bentourkia

SEMseeker an R Package for the Stochastic Epigenetic Mutation Analysis of Human Genome and EWAS **(Ref: *65*)**

Luigi Corsaro, Davide Gentilini and Luciano Calzari

Assessment of inflammation in non-calcified artery plaques with dynamic 18F-FDG-PET/CT: CT alone, does-it detect the vulnerable plaque? **(Ref: *95*)**

Mamdouh S. Al-Enezi, Abdelouahed Khalil, Tamas Fulop, Eric Turcotte and M'Hamed Bentourkia

Cerebral activation in subjects with developmental coordination disorder: a pilot study with PET imaging **(Ref: *96*)**

Marie Farmer, Bernard Echenne and M'Hamed Bentourkia

Modelling of arbitrary shaped channels and obstacles by distance function **(Ref: *101*)**

Kristína Kovalčíková Ďuračíková, Alžbeta Bugáňová and Ivan Cimrák

Architecture and calibration of a multi-channel Electrical Impedance Myographer **(Ref: *126*)**

Edson Rodrigues, Olavo Luppi Silva and Erick Dario Leon Bueno de Camargo

NMF for quality control of multi-modal retinal images for diagnosis of diabetes mellitus and diabetic retinopathy **(Ref: *146*)**

Anass Benali, Alfredo Vellido, Laura Carrera, Ann Christin, Ruben Martín, Anibal Alé, Marina Barraso, Carolina Bernal, Sara Marín, Silvia Feu, Josep Rosinés, Teresa Hernandez, Irene Vilá, Cristian Oliva, Irene Vinagre, Emilio Ortega, Marga Gimenez, Enric Esmatjes, Enrique Romero and Javier Zarranz-Ventura

DiveR: An R shiny web application for visualization of viral protein sequence diversity dynamics **(Ref: *151*)**

Pendy Tok, Li Chuin Chong and Mohammad Asif Khan

Adaptative modelling of the corneal architecture in a free-of-stress state in incipient keratoconus. **(Ref: *175*)**

Francisco Cavas, Carmelo Gómez, José S. Velázquez, David Piñero, Francisco Sáez and Jorge Alió

Design of an analysis method for the human cornea's bilateral symmetry. A case-study in healthy patients. **(Ref: *176*)**

Francisco Cavas, José S. Velázquez, Carmelo Gómez, Jorge Mira, Francisco Sáez and Jorge Alió

Minimizing regain awareness time of the epileptic patient using well-known phone ringtone **(Ref: *160*)**

Nabeel Fattah, Nabeel Fattah and Nabeel Fattah

Sequential Window Acquisition of all Theoretical Mass Spectra for the prediction of response to neoadjuvant chemotherapy in HER2-positive breast cancer **(Ref: *78*)**

Cristina Núñez

Statistical learning analysis of thyroid cancer microarray data **(Ref: *100*)**

Ivan Petrini, Rocío Cecchini, Marilina Mascaró, Ignacio Ponzoni and Jessica Carballido

LAST MINUTE MODIFICATION

Leveraging multi-omics integration to improve the diagnostic power of mitochondrial diseases **(Ref: *181*)**

Justine Labory and Silvia Bottini

Moved from Session:

Session A.14: Machine Learning in Bioinformatics (Part. II)

To Session:

Session B.3: Computational Systems for Modelling Biological Processes

—— **Plenary talk. Thursday, June 30th, 2022**——

Correct title of the plenary presentation from: **Prof. Jean-marc Schwartz**

Title of the presentation: Integration of network and omics analyses for disease stratification

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