COPM 2024 conference program - May 22nd, 2024

Plenary session (1A)

Chairman: prof. dr hab. Marek Łos

13:00 – 13:15 **Opening session**

13:15 – 14:00 **Dr Tomasz Kościółek (Silesian University of Technology, Poland)**
Human gut microbiome time series analysis

Parallel session (2A)

Chairwoman: dr inż. Justyna Mika

14:00 **Kawalec T**, Polańska J, Hvidoere International Study Group on Childhood Diabetes: Predictive model for glycated hemoglobin level in children with type 1 diabetes

14:10 **Gil J,** Łabaj W, Polański A: Adaptation of birth rate in deterministic model for cancer cells population evolution scenario

14:20 **Radwan E**, Savarese M, Tupler R, Polańska J: Data sparseness and dimensionality reduction in cluster analysis - the study of transcriptomic heterogeneity among patients with muscular dystrophies

14:30 **Widzisz K,** Kania M, Żyła J, Polański A: Binary encoding for robust clusterization of somatic mutation profiles of cancer DNA-sequencing data

14:40 **Oleksiński A**, Polański A, Kania M: Statistical distances between multivariable distributions for predicting performance of clustering algorithms based on gene expression data of cancers

14:50 **Kuliś K**, Polańska J, Szlauer-Stefańska A, Kamińska-Winciorek G: Machine learning methods to trace changes over time of series of images

15:00 **Sierko M**, Śmigiel S, Ledziński D: Classification of thyroid diseases based on blood tests using machine learning techniques

15:10 **Strzoda T**, Najim M, Cruz-Garcia L, Badie C, Polańska J: Targeted vs. whole-genome alignment - does it matter?

15:20 **Łabaj W**: Adaptation simulated data to the characteristics of real sequencing data based on VAF statistic

15:30 **Ochocki M**, Żyła J: Exploring the impact of varied parameters on Gaussian Mixture Model clustering efficiency

15:35 **Laber V**, Polańska J: Assessment of feature filtering methods for transcriptomic data classification tools

Parallel session (2B)

Chairwoman: dr inż. Maria Gracka

14:00 **Kocikowska O**, Rak M, Mizera A, Urban A, Gendosz de Carrillo D, Jędrzejowska-Szypułka H: An *in silico* exploration of potential ischemic stroke mRNA biomarkers

14:10 **Bhushan B**, Aghaei M, da Silva Rosa SC, Gordon JW, Ghavami S: IRE RNase Inhibition Promotes Differentiation and Reduces Proliferation in Alveolar Rhabdomyosarcoma Cell

14:20 **Khan S,** Qasim M, Ali I: Analysis of antibacterial and antibiofilm activity of chlorophyllin extracted from Spinacia oleracea against cariogenic Streptococcus mutans

14:30 **Ul Haq I,** Lima WG, Krukiewicz K, Vieira RP, de Lima ME: Antimicrobial activity of peptides derived from Lycosa erythrognatha spider venom against quinolone-resistant uropathogenic Escherichia coli and ADMET profiling *in silico*

14:40 **Zielińska K,** Udekwu K, Rudnicki W, Frolova A, Kościółek T, Łabaj PP: Healthy microbiome - moving towards functional interpretation

14:50 **Behrooz AB**, Ramandi HD, Latifi-Navid H, Peymani P, Tarharoudi R, Momeni N, Azarian MMS, Eltonsy S, Pour-Rashidi A, Ghavami S: IDH1, MGMT, and TERT simultaneous mutation in Glioblastoma patients

15:00 Moreira MG, Oliveira AGG, Ul Haq I, **Gomide F**, dos Santos SG: Diagnosis of Acinetobacter baumannii through droplet digital PCR

15:10 Asghar M, Khan TA, Séraphin MN, Ul Haq I, Clark T, Ullah I, **Humayun M**: Exploring the frontiers of drug resistance and clinical dynamics of Salmonella typhi

15:15 **Kapek Ł**, Kijonka M, Borys D, Niewiadomska B, Prażmowska J, Woźniak B, Wajda A, Woźnica A, Ciszek W, Bekman A, Orlef A, Sokół M: The mathematical modeling of the circadian melatonin cycle

15:20 **Kijonka M**, Chyrek A, Stankiewicz M, Woźnica A, Niewiadomska B, Orlef A, Sokół M, Wojcieszek P: Supervised modeling algorithm in retrospective data of patients with basal cell carcinoma (BCC)

15:25 **Dudzisz K**, Wandzik I: Study on application of nanopharmaceuticals in animal models of neurodegenerative diseases - review

15:30	**Woźnica A**, Prażmowska J, Kijonka M, Woźniak B, Bekman A, Niewiadomska B, Kapek Ł, Wajda A, Orlef A, Ciszek W, Sokół M: Dosimetric film verification of the smallest targets in radiotherapy
15:35	**Bekman A**, Woźniak B, Niewiadomska B, Prażmowska B, Woźnica A, Kapek Ł, Kijonka M, Wajda A, Ciszek W, Orlef A, Sokół M, Wendykier J, Bekman B: Dosimetric properties of the high dose electron beam in Clinac 23Ex and Truebeam Varian linacs for total skin irradiation cancer therapy.

Plenary session (3A)

Chairwoman: prof. dr hab. inż. Joanna Polańska

16:00 – 16:45 **Dr Tanuj Puri (University of Manchester, UK)**
Assessing interaction between toxicity outcomes and dose surface maps at the bladder and rectum in prostate cancer patients after radiotherapy

Parallel session (4A)

Chairman: dr hab. inż. Michał Marczyk

16:45	**Merta J**, Marczyk M: Unsupervised method for the detection of single cells in histopathological images
16:55	**Socha M**, Verdú-Díaz J, Manera JD, Straub V, Polańska J: Skin segmentation from the lower leg MRI of patients with muscle dystrophy
17:05	**Węgrzyn M**, Kijonka M, Borys D, Prażmowska J, Kapek Ł, Bekman A, Woźniak B, Bobek-Billewicz B, Hebda A, Wawrzyniak P, Ładziński P, Stępień T, Orlef A, Sokół M: Volumetric analysis reveals subcortical atrophy patterns in Parkinson's disease: insights from neuroimaging study
17:15	**Daszkiewicz M**, Marczyk M: Quantitative evaluation of image quantization in histopathological analysis using Gaussian Mixture Modeling
17:25	**Paś B**, Kalisz S, Marczyk M: Classification of lung diseases with the use of artifical intelligence methods
17:35	**Suwalska A**, Wang Y, Yan Z, Jiang Y, Suo C, Polańska J: Preliminary results of automatic brain lacunes detection based on MRI modalities
17:45	**Kruszyk S**, Śmigiel S, Ledziński D: Evaluating ResNet architectures for brain tumor classification based on MRI images
17:55	**Piórecki Ł,** Kufel J, Rojek M, Czogalik Ł, Bielówka M, Dudek P, Magiera M, Stencel M, Cebula M, Gruszczyńska K, Polańska J**:** Unveiling precise segmentation of Trachea and Endotracheal Tube using U-Net

Parallel session (4B)

Chairwoman: dr inż. Joanna Tobiasz

16:45	**Ul Haq I**, Shyntum DY, Abdullah A, Maryam S, Alam Z, Krukiewicz K: Investigating the antimicrobial efficacy of polymer-coated urinary catheters: an integrated in vitro and in silico approach with ADMET profiling
16:55	Kastelik-Hryniewiecka A, **Kuźnik N**: Targeted & bioresponsive molecular probes for MRI and PET tomography based on new iron-zirconium-89 chelates
17:05	**Melka B,** Białecki R, Ostrowski Z, Mesek M, Sinek A, Rojczyk M, Adamczyk W, Gracka M, Borys D, Psiuk-Maksymowicz K: Computational modelling in cardiovascular applications in case of myocardial bridge and artery stiffness estimation
17:15	**Hayat R**, Anees M, Manzoor N: Screening and evaluation of indigenous soil borne bacterial strains for degradation of pesticides using microcosmic assay
17:25	Ali I, **Rahim K**: Computational exploration and molecular dynamic simulation for the discovery of antiviral agents targeting Newcastle disease virus
17:35	Ali I, **Ur Rahman R**: Computational exploration of BRD4 inhibitors for neuroblastoma treatment: integrative pharmacoinformatic strategies from virtual screening to molecular dynamics simulation and ADMET evaluation
17:45	**Ali I**: Computational exploration of novel ROCK2 inhibitors for cardiovascular disease management; insights from high-throughput virtual screening, molecular docking, DFT and MD simulation
17:55	**Tylisz J**, Guzdek B, Warska Z, Matyszok D, Zakrzewska Z, Kopiec B, Ostrowski Z, Szewczenko J, Krukiewicz K: Regenerative effects of piezoelectric materials for cardiovascular applications

		18:00	**Chmura A**, Czudek A, Tomasik A, Kastelik-Hryniewiecka A, Miszczyszyn K, Sochaczewski Ł, Żółtowska M, Mikolajczak R, Frejd FY, Nestor M, Kramer-Marek G: Liquid target production of zirconium-89 for antibody labelling
18:05	**Karpiel I**, Gaździński S, Dziuda Ł: GIFT toolbox analysis of brain responses to LBNP training: a preliminary study	18:05	**Fołta K**, Abdullah A, Shyntum DY, Krukiewicz K: Electrochemical methods for detecting electroactive bacteria
18:10	**Gorczewska I**, Kijonka M, Borys D, Jurkiewicz E, Sokół M: Volumetric developmental changes of subcortical brain structures from infancy to adulthood		
18:15	**Mrukwa A**, Socha M, Suwalska A, Polańska J: Is radiomics invariant to upscaling of low-dose chest CT?		

Plenary session (5A)

Chairman: dr hab. inż. Michał Marczyk

18:20 – 18:30 **Conference summary and closing**