

## COPM 2024 conference program – May 22<sup>nd</sup>, 2024

### Plenary session (1A)

	<b>Chairman: prof. dr hab. Marek Łos</b>
13:00 – 13:15	<b>Opening session</b>
13:15 – 14:00	<b>Dr Tomasz Kościółek (Silesian University of Technology, Poland)</b> Human gut microbiome time series analysis

### Parallel session (2A)

**Chairwoman: dr inż. Justyna Mika**

	<b>Kawalec T</b> , Polańska J, Hvidoere International Study Group on Childhood Diabetes: Predictive model for glycated hemoglobin level in children with type 1 diabetes
14:00	
14:10	<b>Gil J</b> , Łabaj W, Polański A: Adaptation of birth rate in deterministic model for cancer cells population evolution scenario
14:20	<b>Łabaj W</b> : Adaptation simulated data to the characteristics of real sequencing data based on VAF statistic
14:30	<b>Widzisz K</b> , Kania M, Żyła J, Polański A: Binary encoding for robust clusterization of somatic mutation profiles of cancer DNA-sequencing data
14:40	<b>Oleksiński A</b> , Polański A, Kania M: Statistical distances between multivariable distributions for predicting performance of clustering algorithms based on gene expression data of cancers
14:50	<b>Kuliś K</b> , Polańska J, Szlauer-Stefańska A, Kamińska-Winciorek G: Machine learning methods to trace changes over time of series of images
15:00	<b>Sierko M</b> , Śmigiel S, Ledziński D: Classification of thyroid diseases based on blood tests using machine learning techniques
15:10	<b>Strzoda T</b> , Najim M, Cruz-Garcia L, Badie C, Polańska J: Targeted vs. whole-genome alignment - does it matter?
15:20	<b>Radwan E</b> , Savarese M, Tupler R, Polańska J: Data sparseness and dimensionality reduction in cluster analysis - the study of transcriptomic heterogeneity among patients with muscular dystrophies
15:30	<b>Ochocki M</b> , Żyła J: Exploring the impact of varied parameters on Gaussian Mixture Model clustering efficiency
15:35	<b>Laber V</b> , Polańska J: Assessment of feature filtering methods for transcriptomic data classification tools

### Parallel session (2B)

**Chairwoman: dr inż. Joanna Tobiasz**

	<b>Kocikowska O</b> , Rak M, Mizera A, Urban A, Gendosz de Carrillo D, Jędrzejowska-Szypułka H: <i>An in silico</i> exploration of potential ischemic stroke mRNA biomarkers
14:00	
14:10	<b>Bhushan B</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	<b>Khan S</b> , Qasim M, Ali I: Analysis of antibacterial and antibiofilm activity of chlorophyllin extracted from <i>Spinacia oleracea</i> against cariogenic <i>Streptococcus mutans</i>
14:30	<b>Ul Haq I</b> , Lima WG, Krukiewicz K, Vieira RP, de Lima ME: Antimicrobial activity of peptides derived from <i>Lycosa erythrognatha</i> spider venom against quinolone-resistant uropathogenic <i>Escherichia coli</i> and ADMET profiling <i>in silico</i>
14:40	<b>Zielińska K</b> , Udekwu K, Rudnicki W, Frolova A, Kościółek T, Łabaj PP: Healthy microbiome - moving towards functional interpretation
14:50	<b>Behrooz AB</b> , Ramandi HD, Latifi-Navid H, Peymani P, Tarharoudi R, Momeni N, Azarian MMS, Eltonsy S, Pour-Rashidi A, Ghavami S: <i>IDH1</i> , <i>MGMT</i> , and <i>TERT</i> simultaneous mutation in Glioblastoma patients
15:00	Moreira MG, Oliveira AGG, Ul Haq I, <b>Gomide F</b> , dos Santos SG: Diagnosis of <i>Acinetobacter baumannii</i> through droplet digital PCR
15:10	Asghar M, Khan TA, Séraphin MN, Ul Haq I, Clark T, Ullah I, <b>Humayun M</b> : Exploring the frontiers of drug resistance and clinical dynamics of <i>Salmonella typhi</i>
15:15	<b>Kapek Ł</b> , 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	<b>Kijonka M</b> , 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	<b>Dudzisz K</b> , Wandzik I: Study on application of nanopharmaceuticals in animal models of neurodegenerative diseases - review

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

### Plenary session (3A)

**Chairwoman: prof. dr hab. inż. Joanna Polańska**

**Dr Tanuj Puri (University of Manchester, UK)**

16:00 – 16:45	Assessing interaction between toxicity outcomes and dose surface maps at the bladder and rectum in prostate cancer patients after radiotherapy
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### Parallel session (4A)

**Chairman: dr inż. Michał Marczyk**

16:45	<b>Merta J</b> , Marczyk M: <b>Unsupervised method for the detection of single cells in histopathological images</b>
16:55	<b>Socha M</b> , Verdú-Díaz J, Manera JD, Straub V, Polańska J: <b>Skin segmentation from the lower leg MRI of patients with muscle dystrophy</b>
17:05	<b>Węgrzyn M</b> , 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: <b>Volumetric analysis reveals subcortical atrophy patterns in Parkinson's disease: insights from neuroimaging study</b>
17:15	<b>Daszkiewicz M</b> , Marczyk M: <b>Quantitative evaluation of image quantization in histopathological analysis using Gaussian Mixture Modeling</b>
17:25	<b>Paś B</b> , Kalisz S, Marczyk M: <b>Classification of lung diseases with the use of artificial intelligence methods</b>
17:35	<b>Suwalska A</b> , Wang Y, Yan Z, Jiang Y, Suo C, Polańska J: <b>Preliminary results of automatic brain lacunes detection based on MRI modalities</b>
17:45	<b>Kruszyk S</b> , Śmigiel S, Ledziński D: <b>Evaluating ResNet architectures for brain tumor classification based on MRI images</b>
17:55	<b>Piórecki Ł</b> , Kufel J, Rojek M, Czogalik Ł, Bielówka M, Dudek P, Magiera M, Stencel M, Cebula M, Gruszczyńska K, Polańska J: <b>Unveiling precise segmentation of Trachea and Endotracheal Tube using U-Net</b>

### Parallel session (4B)

**Chairwoman: dr inż. Maria Gracka**

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

18:05 **Karpień I**, Gaździński S, Dziuda Ł: [GIFT toolbox analysis of brain responses to LBNP training: a preliminary study](#)

18:10 **Gorczeńska 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?](#)

18:00 **Chmura A**, Czudek A, Tomasik A, Kastelik-Hryniewiecka A, Miszczyszyn K, Sochaczewski Ł, Żółtowska M, Mikołajczak R, Frejd FY, Nestor M, Kramer-Marek G: [Liquid target production of zirconium-89 for antibody labelling](#)

18:05 **Foła K**, Abdullah A, Shyntum DY, Krukiewicz K: [Electrochemical methods for detecting electroactive bacteria](#)

#### Plenary session (5A)

18:20 – 18:30

**Chairman: dr inż. Michał Marczyk**  
**Conference summary and closing**