

BIT22 Program

Thursday, June 23 th Venue: Institute of Physics UMK, Grudziadzka 5 street, Toruń; COK Lecture Hall	
12:00 - 13:15	Registration
12:00 - 13:15	Lunch (included in registration fee)
13:25 - 13:30	Conference opening / Welcome
13:30 - 14:45	Session I
13:30 - 14:15	Opening lecture: Włodzisław Duch, Nicolaus Copernicus University, Torun, Poland, International Neural Network Society Fellow "Mental States in Brains and Computers"
14:15 - 14:45	Alex Adams, Oxford University, Oxford, UK "The challenges and opportunities of adaptive nanopore sequencing"
14:45 - 15:15	Coffee break
15:15 - 16:50	Session II
15:15 - 16:00	Yasuteru Shigeta, University of Tsukuba, Tsukuba, Japan "Integrated drug discovery simulations for Covid-19 main protease"
16:00 - 16:30	Adolfo Poma Bernaola, University of Lodz, Lodz, Poland "Molecular biomechanics of the SARS-CoV-2 variants: The virus-host cell attachment"
16:30 - 16:50	Krzysztof Kuczera, University of Kansas, Kansas, US "Thermodynamics and kinetics of GB1 hairpin folding from replica-exchange and molecular dynamics simulations"
16:55 - 17:00	Conference PHOTO at entrance to the Institute of Physics
17:00 - 18:00	Poster session & Coffee break
18:00 - 19:10	Session III
18:00 - 18:30	Guilliem Ylla Bou, Jagiellonian University, Krakow, Poland "Comparative genomics of insects to unveil the evolution of gene regulatory networks"
18:30 - 18:50	Bartosz Wilczyński, Warsaw University, Warsaw, Poland "Machine learning approaches to regulatory element identification"
18:50 - 19:10	Witold Rudnicki, University of Bialystok, Bialystok, Poland "Hunting for Biomarkers in Omics Data - methods and application"
19:15 - 19:45	PTBI Board of Directors meeting (for the Board only)
20:00 - 22:00	Conference social "pierogi & beer" gathering at Restaurant "Pierogarnia Stary Toruń", Most Pauliński 2 street. Note: food is included in the registration fee
Friday, June 24 th Venue: Institute of Physics UMK, Grudziadzka 5 street, Toruń; COK Lecture Hall	
9:00 - 10:00	Session IV internet lectures mainly
9:00 - 9:20	Karolina Mikulska-Ruminska, Nicolaus Copernicus University, Torun, Poland "The role of PE-binding protein 1 in the ferroptosis process" (INTERNET LECTURE)
9:20 - 9:40	Vasilis Promponas, University of Cyprus, Nicosia, Cyprus "Computational resources for studying selective macroautophagy" (INTERNET LECTURE)
9:40 - 10:00	Jan Brezovsky, Adam Mickiewicz University, Poznan; Poland and IIMCB Warsaw, Poland "Exploring Dynamic Determinants of Quorum Quenching Activity Employed by N-terminal Serine Hydrolases to Enable Rational Engineering of their Potency as Alternative Antimicrobial Agents for Selective Control of Virulence in Resistant Bacterial Species"
10:00 - 10:15	Coffee break
10:15 - 12:30	Session V
10:15 - 11:00	Shoshana J. Wodak, VIB-VUB Center for Structural Biology, Brussels, Belgium "Charting and characterizing the conformational landscape of native proteins" (INTERNET LECTURE)
11:00 - 11:30	Jaroslav Meller, Cincinnati Children's Hospital Medical Center and University of Cincinnati, Cincinnati, US "Exploring Transcriptional Signature Connectivity in Conjunction with Biophysical Complementarity for Drug Discovery and Repurposing"
11:30 - 11:50	Robert Nowak, Warsaw University of Technology, Warsaw, Poland "Lock-Free de Bruijn graph"
11:50 - 12:10	Malgorzata Kotulska, Wrocław University of Science and Technology, Wrocław, Poland "Topological analysis as a tool for detection of abnormalities in protein-protein interaction data"
12:10 - 12:30	Paweł Łabaj, Małopolska Centre of Biotechnology, Jagiellonian University, Krakow, Poland "News from The Metagenomics and Metadesign of the Subways and Urban Biomes (MetaSUB)"

Friday, June 24th Venue: Institute of Physics UMK, Grudziadzka 5 street, Toruń; COK Lecture Hall

12:30 - 14:30	Lunch (included in registration fee) Free sightseeing tour in English (13:00-14:30)
16:00 - 17:30	Session VI
16:00 - 16:30	Damian Wojtowicz, National Institutes of Health (NIH, NLM, NCBI), US "Signatures of mutational processes in cancer" (INTERNET LECTURE)
16:30 - 17:00	Subhash C. Basak, University of Minnesota, Duluth, US "Use of alignment-free sequence descriptors (AFSDs) in the characterization of emerging global viral pathogens" (INTERNET LECTURE)
17:00 - 17:30	Jan Kosinski, European Molecular Biology Laboratory (EMBL) and Centre for Structural Systems Biology (CSSB) Hamburg, Germany "Structure of the human nuclear pore complex by AlphaFold and integrative modeling" (INTERNET LECTURE)
17:30 - 18:00	Poster session & Coffee break
18:00 - 19:00	Session VII
18:00 - 18:10	Patrycja Rosa, University of Warsaw, Warsaw, Poland "Exploring gene expression features concordant with Topologically Associating Domains"
18:10 - 18:20	Katarzyna Nałęcz-Charkiewicz, Warsaw University of Technology, Warsaw, Poland "De novo assembly as a solution to the Traveling Salesman Problem in bounded-degree graphs using Quantum Annealer"
18:20 - 18:30	Carlos Sequeiros-Borja, International Institute of Molecular and Cell Biology in Warsaw, Warsaw, Poland "Squeezing water to the limits, transport of water through narrow tunnels in enzymes and consequences to their (dis)function"
18:30 - 18:40	Adam Napieralski, Warsaw University of Technology, Warsaw, Poland "Basecalling DNA sequences using sequence-to-sequence machine learning algorithms by joint processing of raw and event nanopore data"
18:30 - 18:40	Filip Stefaniak, International Institute of Molecular and Cell Biology, Warsaw, Poland "fingeRNAt—A novel tool for high-throughput analysis of nucleic acid-ligand interactions" (INTERNET LECTURE)
20:15 - 22:00	Not included in registration fee: Social common meal (no. of places limited) at "Piernicova" restaurant, Przedzamcze 6B street. You pay your bill!

Saturday, June 25th Venue: Institute of Physics UMK, Grudziadzka 5 street, Toruń;

8:30 - 10:45	Coffee break
8:30 - 10:30	Workshop I , COK computer room (PK-COK) Katarzyna Walczewska-Szewc, Beata Niklas, Nicolaus Copernicus University, Torun, Poland "How to visualize biomolecules? VMD and beyond"
9:00 - 10:30	Workshop II , PK1 computer room Alex Adams, Oxford University, Oxford, UK "Worked examples of machine learning and biomarker development"
10:45 - 12:30	Workshop III , room B.1.9 at ICNT (Interdisciplinary Centre for Modern Technologies), Wileńska 4 street, Toruń, by tram no. 1 (start from Faculty of Physics) "Proteomics at work: trip to experimental BioSep laboratory"