


H.Bioinfo-11 • PRE-CONFERENCE WORKSHOPS

Thursday, November 15, 2018

Venue	Central Computer Lab, Main Library Building AUTH
08:30-09:00	Registration & Coffee
Workshop I	Proteomics Workshop – Hands-on
	Proteomics Bioinformatics: From raw MS-data to, knowledge - Hands-on Workshop
	Chair: Michalis Aivaliotis
09:00-09:15	Introduction to proteomics - <u>Michalis Aivaliotis</u> <ul style="list-style-type: none"> ○ <i>Brief history of MS-based proteomics</i> ○ <i>State-of-the-art quantitative MS-based proteomics approaches</i>
09:15-10:30	Bioinformatics I – MS-Raw data processing - <u>G. Orfanoudaki, K. Psatha, M. Aivaliotis</u> <ul style="list-style-type: none"> ○ <i>Proteome Identification, Quantitation and Characterization</i> ○ <i>Available bioinformatics platforms for MS-data processing</i> ○ <i>Quality control and filtering of proteomics data</i>
10:30-13:00	Bioinformatics II – Meta-data analysis and visualization - <u>N. Fikas, G. Orfanoudaki, A. Malousi, K. Psatha, M. Aivaliotis</u> <ul style="list-style-type: none"> ○ <i>Comparative proteomics analysis</i> ○ <i>Functional proteome annotation</i> ○ <i>GO terms and pathways enrichment analysis</i> ○ <i>Protein-protein interaction networks</i> ○ <i>Visualization of proteomics data</i>
13.00-14.00	 Coffee break
Workshop II	RNA-Seq and ChIP-Seq data analysis – Hands-on
	Advanced RNA-Seq and ChIP-Seq data analysis – Hands-on Workshop
	Chair: <i>Pantelis Topalis</i>
14:00-14:15	Introduction to sequencing technologies - <u>Pantelis Topalis</u> <ul style="list-style-type: none"> ○ First Generation Sequencing (Maxam-Gilbert, Sanger methods) ○ Second Generation Sequencing (Pyrosequencing, Ion-Torrent, Illumina) ○ Third Generation Sequencing (Oxford Nanopore, PacBio)
14:15-16:00	RNA-Seq Data Analysis - <u>P. Ioannidis, P. Topalis</u> <ul style="list-style-type: none"> ○ Quality control of raw reads – Mapping to reference genome – Differential gene expression ○ De novo transcriptome assembly
16:00-18:00	ChIP-Seq Data Analysis - <u>P. Topalis, P. Ioannidis</u> <ul style="list-style-type: none"> ○ ChIPSeq Irreproducible Discovery Rate (IDR) pipeline ○ ENCODE pipeline
	Important Notes: <ul style="list-style-type: none"> - Number of maximum participants 30 - A digital textbook and references will be provided to all participants in advance. - The organizers will provide computers with all the required bioinformatics tools and demo data

H.Bioinfo-11 • CONFERENCE PRELIMINARY AGENDA

Friday, November 16, 2018

Theme: DATA ECONOMIES

09:00-12:00	Registrations and ☕ Coffee
09:00-10:00	HB-11 Welcome notes and Conference outline
10.00-12:45	Session 1: Data Ecosystems
	Keynote Talk
	Giorgos Papadopoulos , CEO, Atypon, USA
	<i>Scientific Editors: how to use them for collaboration, integration with experimental data and submissions</i>
10.40-11:00	☕ Coffee break
	Invited Talk
	Andreas Persidis , CEO, Biovista Inc. & President, Hellenic BioCluster, Greece
	<i>Big Data and AI in healthcare - so where's the money in an AI-powered health industry?</i>
	Invited Talk
	Stavros Papadopoulos , CEO, TileDB Inc., USA
	<i>Managing genomics data with TileDB</i>
	Invited Talk
	Cath Brooksbank , Head of the EMBL-EBI Training Programme, UK
	<i>Nurturing a bioinformatics training programme - from gestation to the teenage years</i>
	Short Talk
	Short Talk
13:00-14:00	🍴 Lunch
14:00-16:00	Session 2: Bio-Economy
	Keynote Talk
	Victor de Lorenzo , Professor, National Center of Biotechnology, Spain
	<i>Scaling-up bioremediation from the test tube to planet Earth: what we need to know</i>
	Invited Talk
	Costas Kyparissidis , Professor, Aristotle University of Thessaloniki, Greece
	<i>Model-based intensification and optimization of biopolymers production in microbial factories</i>

	Invited Talk
	Vassily Hadzimanikatis , Professor, EPFL, Switzerland
	<i>Databases, computational methods, and models for a biobased economy</i>
	Short Talk
	Short Talk
16:00-17:00	 Coffee break & Posters
17:00-18:35	Session 3: International Programs
	Keynote Talk
	Lynn Schriml , Assoc. Professor, University of Maryland, USA
	<i>International data coordination: MetaSUB, Crete ISD and data commons.</i>
	Invited Talk
	Eddy Rubin , Chief Scientific Officer, Metabiota
	<i>The Global Virome Project</i>
	Invited Talk
	Sophie Schbath , Research Director, INRA, France
	<i>The French « Microbial Ecosystems & Meta-omics » metaprogram from INRA</i>
18:45-19:00	Group Photo
19:00-20:00	Session 4: Roundtable – Infrastructures
	Participants: <ul style="list-style-type: none"> • Babis Savakis (Greece) • Alfonso Valencia (Spain) • Ioannis Xenarios (Switzerland) • Nikos Kyrpides (USA) • Christos Ouzounis (Greece)
20:00-22:00	 Reception
Saturday, November 17, 2017	
Theme: GENOME INFORMATICS	
09:00-10:35	Session 5: Metabolic engineering
	Keynote Talk
	Peter Karp , Director, Bioinformatics Research Group, Artificial Intelligence Center, SRI, USA
	<i>Computing metabolic routes in organism communities</i>
	Invited Talk
	Steven Hallam , Professor, University of British Columbia, Canada
	<i>Global scale metabolic pathway reconstruction from environmental genomes</i>

	Short Talk
	Short Talk
10:35-11:30	 Coffee break
11:00-13:00	Session 6: Human Microbiome
	Invited Talk Daniel van Der Lelie , Chief Scientific Officer, Gusto Global LLC, USA <i>Modular agent-based modeling platform for bridging interdisciplinary research in ecology, evolution, behavioral biology and computational neuroscience</i>
	Invited Talk Ruth Schmitz-Streit , Professor, Kiel University, Germany <i>Methanoarchaea as part of the human microbiome - friends or foes</i>
	Invited Talk Todd DeSantis , Vice-President of Informatics, Second Genome, USA <i>Microbiome strain and protein level meta-analysis for therapeutic discovery</i>
	Invited Talk Rob Finn , Group Leader, European Bioinformatics Institute, UK <i>Increasing our knowledge of human gut microbiota</i>
	Short Talk
13:00-14:00	 Lunch
14:00-16:00	Session 7: Metagenomics
	Keynote Talk Irimi Angelidaki , Professor, Technical University of Denmark, Denmark <i>Exploring the biogas microbiome</i>
	Invited Talk Tom Curtis , Professor, University of Newcastle, UK <i>Multiscale modelling of microbial communities</i>
	Short Talk
	Short Talk
	Short Talk
16:00-16:30	 Coffee break & Posters
16:30-18:30	Session 8: Omics Technologies
	Invited Talk Mark Borodovsky , Regents' Professor, Georgia Tech, USA <i>Improving tools for structural annotation of genomes and metagenomes</i>
	Invited Talk

	Folker Meyer , Professor, University of Chicago, USA <i>Evaluating metagenome analysis strategies on a bioenergy plot reveals surprising lessons</i>
	Invited Talk Aydin Buluc , Staff Scientist, Lawrence Berkeley National Lab, USA <i>Large-scale parallel computing for computational genomics</i>
	Invited Talk Sergey Ovchinikov , Group Lead, Harvard University, USA <i>From new lineages of life and metagenomics to new protein families and complexes</i>
	Short Talk
18:30-19:30	Session 9: Roundtable <i>Developing computational biology in Greece and Cyprus and open discussion with students</i>
20:00-22:00	 Speakers Dinner
Sunday, November 18, 2017	
Theme: PRECISION MEDICINE & CLINICAL OMICS	
09:00-10:00	Session 10: H.bioinfo society matters <i>Society annual report and discussion</i>
10:00-13:00	Session 11: Translational Genomics
	Keynote Talk Soren Brunak , Professor, Technical University of Denmark, Denmark <i>Population-wide analysis of disease trajectories in a 40-year perspective</i>
10:40-11:10	 Coffee break & Posters
	Invited Talk Ugur Sezer , Professor, Acibadem University, Turkey <i>Integration of multiple omics data in a pathway related context reveals individualized disease aetiology and potential therapeutical targets in cancer</i>
	Invited Talk George Spyrou , Head of the Bioinformatics Group, The Cyprus Institute of Neurology and Genetics, Cyprus <i>Network-based integration of multisource data from neurodegenerative diseases</i>
	Short Talk
	Short Talk
	Short Talk
13:00-14:00	 Lunch

14:00-16:00	Session 12: Functional Genomics
	Keynote Talk
	Alfonso Valencia , Director, Spanish National Bioinformatics Institute, Spain
	<i>TBA</i>
	Invited Talk
	Alexandra Gruca , Assist. Professor, Silesian University of Technology, Poland
	<i>PersonALL – molecular diagnostics, multi-omics data integration and treatment personalisation of acute lymphoblastic leukemia for Polish children</i>
	Invited Talk
	Anton Enright , Group Lead, University of Cambridge, UK
	<i>Genome free prediction of microRNAs using machine learning</i>
	Short Talk
	Short Talk
16:00-16:30	☕ Coffee break
16:30-18:10	Session 13: Databases & Ontologies
	Keynote Talk
	Ioannis Xenarios , Professor, University of Lausanne, Switzerland
	<i>Reference base knowledge from functional annotation of sequences to genome-scale models</i>
	Invited Talk
	Ylva Ivarsson , Assoc. Professor, University of Uppsala, Sweden
	<i>Exploring transient protein-protein interactions and phosphoswitches</i>
	Invited Talk
	Radoslav Davidovic , Research Scientist, Vinča Institute of Nuclear Sciences, Serbia
	<i>Prediction of human phenotype ontology terms using sequence information and enrichment analyses</i>
	Short Talk
	Short Talk
18:10-18:30	Concluding Remarks – Handoff to Hbioinfo-12
	Adjourn