sbv IMPROVER Symposium 2013

The Species Translation Challenge:
Understanding the Limits of Rodent Models for Human Biology

Grand Resort Lagonissi Athens, Greece 29 – 31 October 2013

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SYSTEMS BIOLOGY VERIFICATION

sbv IMPROVER Symposium 2013 – Keynote Speakers

Dr. Adi Laurentiu Tarca

Director, Bioinformatics and Computational Biology Unit, Perinatology Research Branch (NICHD/NIH)

Title of Keynote: "Machine learning and pathway analysis as basic tools in systems biology"

Dr. Tarca is an Assistant Professor with the Department of Computer Science & Center for Molecular Medicine and Genetics of Wayne State University in Detroit, Michigan, and the Director of Bioinformatics and Computational Biology Unit of the Perinatology Research Branch (NICHD/NIH). He obtained a PhD in chemical engineering from Laval University (Quebec) where he also started his postdoctoral work in bioinformatics.

Dr. Tarca has published on high-throughput data analysis, including methods for data preprocessing, gene set and pathway analysis, and machine learning applications to biology. His collaborative work with investigators from the Perinatology Research Branch resulted in over 60 publications in the maternal-fetal medicine field addressing issues such as prematurity and preeclampsia via analyses of the transcripome, methylome, microbiome, etc. He is also interested in longitudinal analyses of ultrasound parameters and high-throughput data, such as next generation sequencing.

In the IMPROVER Diagnostic Signature Challenge (2012), Dr. Tarca received the best overall performer award (with Roberto Romero), and he has developed several bioinformatics software packages available via Bioconductor, including nnNorm (for microarray data preprocessing), SPIA (for signaling pathway analysis), PADOG (for gene set analysis) and maPredictDSC (for predictive modeling using microarrays).

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Dr. George Kollias

Member of the Academy of Athens
Professor of Physiology, Medical School, University of Athens
Researcher, Biomedical Sciences Research Center 'Alexander Fleming'

Title of Keynote: "Mapping human disease pathogenesis via alignments with animal models"

Professor Dr. George Kollias is a full member of the Academy of Athens, Professor of Experimental Physiology at the Medical School of the University of Athens and Researcher and Director of the Immunology Division at the Biomedical Sciences Research Center "Alexander Fleming". He received his degree in Biology from the University of Athens, and PhD from the National Hellenic Research Foundation. He performed postdoctoral studies at the National Institute for Medical Research in London and in 1990 he established an independent laboratory at the Hellenic Pasteur Institute. In 2000 he moved to BSRC Fleming where he served as President and Scientific director from 2002-2010. In 2005 he founded the CRO-biotech spin-off company Biomedcode Hellas.

Dr. Kollias is a leader in the field of TNF function in pathophysiology and has made significant contributions in understanding immunological disease mechanisms in animal models. His group provided preclinical proof of principle studies that drove the development of anti-TNF therapies for rheumatoid arthritis. He has published over 150 primary research articles and more than 40 reviews and commentaries (>17000 citations, h-index 62). His laboratory is supported by several competitive grants from European and National sources, including BTCure, an IMI project aiming to develop new therapies against rheumatoid arthritis. He was granted recently a 2013 Advanced ERC grant to study the role of mesenchymal cells in intestinal homeostasis and pathophysiology.

Dr. Kollias is an elected member of EMBO since 2000 and served as member and Panel Chair of the ERC Starting grants panel for Immunity and infection. He served as the National Representative of Greece to ESFRI (2010-2012) and as member of the ESFRI working group on Health and Food to date. Dr. Kollias was elected President of the Council of the Directors of the Greek Research Centers (2009-2010) and member of the National Council on Research and Technology of the Ministry of Development (2001-2003 and 2005-2009).

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sbv IMPROVER Symposium 2013 – Keynote Speakers

Dr. Joaquin Dopazo

Head of the Computational Genomics Department,
Principe Felipe Research Center, Valencia, Spain

Title of Keynote: "Using mechanism-based biomarkers to predict complex traits"

Dr. Joaquin Dopazo received his PhD in Biology at the University of Valencia (Spain) in 1989 working on molecular evolution. After several appointments in different research centers he worked for 5 years in Glaxo Wellcome (now Glaxo SmithKline) during the late nineties. There he was developing methods for bacterial genomic analysis and he participated in several bacterial and fungal genome projects. In 2000 he moved to the Spanish National Cancer Center (CNIO), where he set up the Bioinformatics group. In the CNIO he designed the first Spanish microarray (the Oncochip) in 2000 and he developed the most used resource for microarray data analysis on the web (GEPAS, www.gepas.org) and the Babelomics (www.babelomics.org), one of the most used resources for genomic data analysis and interpretation (cited more than 1500 times http://bioinfo.cipf.es/docus/tools-citations/functional_profiling). In 2005 Dr. Dopazo moved to the CIPF (Valencia) where he set up the Department of Computational Genomics (formerly Bioinformatics). Currently, the scope of the algorithms and software developed has evolved towards the field of massive sequence data analysis. Recently, one of the developments of Dopazo's group, the software GenomeMaps (www.genomemaps.org), has been chosen as the genome viewer of the International Cancer Genome Consortium (www.icgc.org).

Dr. Dopazo has promoted genomic projects such as the FutureClinic (www.futureclinic.es) to prepare the scenario for the introduction of the genome in the electronic health record or the Medical Genome Project (www.medicalgenomeproject.com) to sequence 1000 patients (800 sequenced to date) of inherited diseases to search for new biomarkers and disease genes. He was also involved in international projects such as the MAQC and SEQC (best practices in the use of microarrays and NGS, respectively, for finding diagnostic biomarkers) or the START consortium to characterize the variability of the rat genome. He has been also promoter of the CitrusGen project to sequence more than 500 citric genomes for genetic improvement purposes.

Dr. Dopazo's interests revolve around functional genomics, systems biology and development of algorithms and software for the analysis of high-throughput data (mainly, but not restricted to, Next Generation Sequencing) and its application to personalized medicine, agro-genomics and nutrigenomics.

He has published 195 papers in international peer reviewed journals, including Nature Genetics, Nature Biotechnology, PNAS, Genome Research, NAR, etc., that amount more than 8000 citations (h-index: 52). He has also published 14 international book chapters and edited one book.

In addition Dr. Dopazo is one of the founders of Genometra (www.genometra.com) a spin-off that provides advanced support and consultancy for the analysis of high-throughput genomic data.

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Dr. Carolyn Cho

Director, Modeling and Simulation, Global Clinical and Regulatory Development, Merck & Co.

Title of Keynote: "Translational Modeling: Impact on Critical Decision-Making in Drug Development"

Dr. Carolyn Cho is applying computational biology approaches to quantitative decision making at Merck, Sharp and Dohme. Carolyn brings over 15 years' experience in pharmaceutical discovery research and clinical development. She has applied computer-based modeling, proteomics, plate-based assays, and integrative analysis to a range of pharmaceutical pipeline decisions from target validation to regulatory agency submission in the therapeutic areas of diabetes, osteoporosis, Alzheimer's and cardiac disease.

Carolyn has previously held positions as Director of Systems Biology target validation at Pfizer and global head of Computational Systems Biology at Novartis Institutes for Biomedical Research (NIBR), as well as at Physiome Sciences (Princeton, NJ), SmithKline Beecham Pharmaceuticals (King of Prussia, PA), and Princeton University. She is also an Advisory Board member of Research Avenue (St. John's, Canada) and Propel (Boston, MA). Dr. Cho received her Ph.D. in biological physics from the University of Toronto and an M.Sc. and B.Sc. in mathematical physics from Memorial University of Newfoundland.