



Hellenic Pasteur Institute

17-18 October

Young Scientists Conference 2024

DAY 1 - THURSDAY 17 OCTOBER

09:00-10:00 Registration & Coffee

10:00-10:30 Opening Remarks

10:30-12:00 **Oral Session 1 | Immunology**

Chair: Dr. Konstantinos Lazaridis, Dr. Vasiliki Kyrargyri

10:30-10:45 Anastasia Dagkonaki, Hellenic Pasteur Institute, «*Maturation of circulating $Ly6C^{hi}CCR2^{+}$ monocytes by mannan-MOG induces antigen-specific tolerance and reverses autoimmune encephalomyelitis*»

10:45-11:00 Eleni Konstantina Loxa, Hellenic Pasteur Institute, «*Application of a competitive ELISA utilizing trimeric spike protein for the detection of neutralizing antibodies in sera of vaccinated individuals against SARS-CoV-2 and patients infected with SARS-CoV-2 variant strain Omicron*»

11:00-11:15 Stavros Naoum, Hellenic Pasteur Institute, «*Tissue factor-expressing neutrophil extracellular traps formation in primary antiphospholipid syndrome is driven by antiphospholipid antibody-mediated platelet activation, subsequent platelet-neutrophil interaction and autophagy induction*»

11:15-11:30 Eleni Ntoukaki, Hellenic Pasteur Institute, «*Investigation of the mechanism of action of an antigen-specific therapy for myasthenia gravis and strategies for pharmacokinetic optimization*»

11:30-11:45 Eleni Papagianni, University of Ioannina, «*The role of neutrophil extracellular traps in the pathogenesis of RA-ILD; the effect of the anti-fibrotic agent Nintedanib in the inflammatory responses of the disease*»

11:45-12:00	<u>Aristotelis Petris</u> , Hellenic Pasteur Institute, « <i>Neutrophil extracellular trap (NETs) release in Helicobacter pylori infection</i> »
12:00-12:15	Biotechnological Companies Session: P Zafeiropoulos, «Novel cell-based Applications in Research and Therapeutics»
12:15-14:00	Poster Session 1 + Lunch Break
14:00-16:15	Oral Session 2 Bioinformatics
	<i>Chair: Dr. Artemis G Hatzigeorgiou</i>
14:00-14:15	<u>Dimitrios Christos Tremoulis</u> , Hellenic Pasteur Institute, « <i>A scalable bioinformatics platform for the streamlined analysis of single cell RNA-seq data</i> »
14:15-14:30	<u>Despoina Kiouri</u> , National Hellenic Research Foundation & National and Kapodistrian University of Athens, « <i>Deep Neural Network Framework for Predicting Protein-Protein Interactions from Structural Data</i> »
14:30-14:45	<u>Agoritsa Kalampaliki</u> , BSRC Alexander Fleming, « <i>A Root Mean Square Deviation Estimation Algorithm (REA) and its use for improved RNA Structure Prediction</i> »
14:45-15:00	<u>Dimitra Panou</u> , BSRC Alexander Fleming, National and Kapodistrian University of Athens, « <i>Biomedical Question Answering using a 'Farm' of Open Large Language Models</i> »
15:00-15:15	<u>Faidon Zacharias Brotzakis</u> , BSRC Alexander Fleming and University of Cambridge, « <i>Computational design of antibodies against disease relevant molecular targets</i> »
15:15-16:15	Keynote 1 Dr. Emmanouil Maragkakis «The genomics of aging: translating large-scale data to molecular mechanisms»
16:15-16:30	Coffee Break

16:30-18:00 **Oral Session 3 | Microbiology**

Chair: Dr. Haralabia Boleti, Dr. Niki Vassilaki

16:30-16:45 Marianna Arvaniti, Agricultural University of Athens, «*Dormancy induction and outgrowth heterogeneity of *Listeria monocytogenes* is affected by stress history and type of growth*»

16:45-17:00 Antonia Efstathiou, Hellenic Pasteur Institute, «*Exosomes as a vaccine candidate against visceral leishmaniasis*»

17:00-17:15 Nikolaos Moustakas, Hellenic Pasteur Institute, «*Qualitative and quantitative detection of Non *Helicobacter pylori* *Helicobacter* (NHPH) species in human gastric biopsies*»

17:15-17:30 Eleni Paximadi, «*Human Endogenous Retro Viruses (HERVs) and Multiple Sclerosis*»

17:30-17:45 Dimitra Toubanaki, Hellenic Pasteur Institute, «*Utilizing powerful molecular tools to understand environment-threatening viruses: the case of viral encephalopathy*»

17:45-18:00 Vasileios Gouzouasis, Hellenic Pasteur Institute, «*COVID-19 Infection Reactivates Epstein-Barr Virus and Precipitates the First Clinical Episode in a Greek Cohort of Multiple Sclerosis Patients*»

18:00-19:00 **Keynote 2 | Dr. Evangelos Giamarellos**

«Personalized infection treatment»

19:00-21:00 Official presentation of the 100th Anniversary
Edition Pasteur Album

21:00 **Cheese & Wine**



DAY 2 - FRIDAY 18 OCTOBER

09:30-10:45 Oral Session 4 | Bioinformatics

Chair: Dr. Timokratis Karamitros, Dr. Magdalini Bletsas

- 09:30-09:45 Marina Petsana, University of Thessaly and Hellenic Pasteur Institute, «*In Silico Identification and Analysis of Proteins Containing the Phox Homology Phosphoinositide-Binding Domain in Kinetoplastea Protists*»
- 09:45-10:00 Anargyros Skoulakis, University of Thessaly and Hellenic Pasteur Institute, «*Machine Learning-Based Prediction of Antimicrobial Resistance in ESCAPEE Pathogens Using Genomic Data*»
- 10:00-10:15 Maria Bousali, Hellenic Pasteur Institute, «*HBV Integrations: How Does Viral Load Affect Their Frequency and Genomic Distribution?*»
- 10:15-10:30 Alexandros Galaras, BSRC Alexander Fleming and University of Thessaly, «*LncRNA EPB41L4A-AS1 encodes a novel mitochondrial microprotein with tumor suppressive effects*»
- 10:30-10:45 Chrysoula Kaligerou, Hellenic Pasteur Institute, «*Development of an analytical NGS workflow for the clinical interpretation of whole exome sequencing data from patients with Multiple Myeloma*»
- 10:45-11:00 Coffee Break

11:00-12:15 **Oral Session 5 | Structural Biology – Biotechnology & Public Health**

Chair: Dr. Emmanouil Angelakis, Dr. Marios Zouridakis

11:00-11:15 Oleksii Kupreienko, Hellenic Pasteur Institute and Agricultural University of Athens, «*Towards the development of novel allosteric activators for human angiotensin-converting enzyme 2*»

11:15-11:30 Maria-Evgenia Politi, Hellenic Pasteur Institute and Agricultural University of Athens, «*Expression, purification and characterization of human tyrosinase and crystallographic studies of a bacterial structural surrogate*»

11:30-11:45 Maria Voumvouraki, National and Kapodistrian University of Athens, «*Comparing different lysis conditions for proteomics analysis of amyloid deposits in biopsies for diagnostics*»

11:45-12:00 Constatinos Karamalis, University of West Attica, «*Development of a molecular assay for the identification of Streptococcus spp. directly in clinical samples and the impact on an accurate diagnosis in public health measures*»

12:00-12:15 Eirini Kosta, Hellenic Pasteur Institute & University of West Attica, «*Subtyping of L. infantum strains from Greece by using genomic DNA isolated from cultivated parasites and different PCR-based techniques*»

12:15-12:30 Biotechnological Companies Session: Antisel, “Witness the Next-Generation of Multiomics”

12:30-14:00 **Poster Session 2 + Lunch Break**

14:00-15:00 Scientific Image Session & Neuroholics

“Science communication: Neuroholic’s point of view”

15:00-15:30 Coffee Break

15:30-16:30 **Keynote 3 | Dr. Mark Mattson**

«Understanding and Counteracting Brain Aging

16:30-18:00 **Oral Session 6 | Neurobiology**

Chair: Dr. Dimitra Thomaidou, Dr. Florentia Papastefanaki

16:30-16:45 Elissavet Akrioti, Hellenic Pasteur Institute, «*Deciphering and targeting early synaptic dysfunction in pre-clinical models of familial Parkinson's disease*»

16:45-17:00 Spyridon Antoniadis, Aristotle University of Thessaloniki and National and Kapodistrian University of Athens, «*Connecting Connectomes to Physiology via optogenetics and complex network theory: an ex vivo Investigation of Spontaneous Oscillations in the Mouse Motor Cortex*»

17:00-17:15 Olympia Apokotou, Hellenic Pasteur Institute, «*Control iPSC-derived astrocytes rescue P.A53T- α Syn patient-iPSC-derived neurons from Parkinson's disease-related pathology*»

17:15-17:30 Maria Margariti, Hellenic Pasteur Institute, «*In vivo study of the effect of microglial BIN1 deletion on mouse brain under homeostatic and neuroinflammatory conditions*»

17:30-17:45 Myrto Patagia Bakaraki, University of West Attica, «*The Impact of Multisensory Strategies on Functionality in Adults with Neurological Disorders*»

17:45-18:00 Athena Boutou, Hellenic Pasteur Institute, «*Microglia regulate cortical remyelination via TNFR1-dependent phenotypic polarization*»

18:00-19:00 **Keynote 4 | Dr. George Paxinos**

«Is the brain in the Goldilocks Zone?»

19:00-20:00 **Award Ceremony | Closing Remarks**

20:00 **Latin Garden Party & Dinner**



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POSTER SESSION DAY 1 - THURSDAY 17 OCTOBER

BIOINFORMATICS

Filippos Kardaras, University of Thessaly & Hellenic Pasteur Institute, «*Impact of Chios Mastic on Oral Health: Reducing Inflammation and Promoting Beneficial Bacteria*»

Vasiliki Kotsira, University of Thessaly & Hellenic Pasteur Institute, «*Agnodice: indexing experimentally supported bacterial sRNA-RNA interactions*»

Marios Miliotis, University of Thessaly & Hellenic Pasteur Institute, «*TarBase v9.0: Expanding Experimentally Validated miRNA–Gene Interactions to Virally Encoded miRNAs and Cell-Type Specific Contexts*»

IMMUNOLOGY

Errikos Fourlas, Hellenic Pasteur Institute, «*Brain region specific microglial dynamics in Experimental Autoimmune Encephalomyelitis*»

Maria Kourouvani, Hellenic Pasteur Institute, «*Spontaneous human CD8 T cell and autoimmune encephalomyelitis-induced CD4/CD8 T cell lesions in the brain and spinal cord of HLA-DRB1*15-positive multiple sclerosis humanized immune system mice*»

Charilaos Spyropoulos, Hellenic Pasteur Institute, «*Investigation of Neutrophil subpopulations and NETs in the peripheral blood of MS patients*»

MICROBIOLOGY

Daniel Carrasco, Hellenic Pasteur Institute & University of Alcalá, «*Leishmania Dual-specificity Tyrosine-Regulated Kinases: Investigating the role of parasite-specific members and discovering small molecule inhibitors against LinDYRK1*»

Myrto Koutantou, Hellenic Pasteur Institute, «*Interaction of human neutrophils with Bartonella henselae in Cat Scratch Disease*»

Eirini Kyriakopoulou, Hellenic Pasteur Institute, «*Implication of L-dopa decarboxylase in dengue virus-mediated inhibition of autophagy and induction of cell death*»

NEUROBIOLOGY

Kalliopi Atsoniou, BSRC Alexander Fleming & National and Kapodistrian University of Athens, «*Differential sleep-like deficits of Neurofibromatosis 1 mutations in Drosophila melanogaster*»

Alexandros G. Charonitakis, BSRC Alexander Fleming, «*A neuronal circuit approach to Habituation and Dishabituation Mechanisms in Drosophila melanogaster*»

Theodoros Dame, Hellenic Pasteur Institute, «*RNA editing contributes to RNA metabolism in Parkinson's disease*»

Sofia Dede, Hellenic Pasteur Institute & Institut Pasteur Paris, «*Impaired uptake and clearance capacity of astrocytes in a iPSC-derived Parkinson's disease model from p.A53T α -synuclein patients*»

Evangelia Papoutsi, Nikos Kokkorakis, Hellenic Pasteur Institute, «*Mirk/Dyrk1B kinase as a potential drug target in ALS*»

Eleftheria Kotzairaki, Biomedical Research Foundation Academy of Athens, «*Integration of diverse platforms to define local mechanisms and long-range signals that mediate brain-heart interactions after injury and during regeneration*»

Elpinickie Ninou, Hellenic Pasteur Institute, «*Microglia-specific phenotypic and functional changes upon neuronal expression of familial Parkinson's disease p.A53T- α synuclein*»



POSTER SESSION DAY 2 - FRIDAY 18 OCTOBER

BIOINFORMATICS

Dimitra Panou, BSRC Alexander Fleming & National and Kapodistrian University of Athens, «*Biomedical Question Answering using a 'Farm' of Open Large Language Models*»

Katerina Politopoulou, Hellenic Pasteur Institute, «*Longitudinal whole brain RNA sequencing reveals characteristic transcriptomic signatures at hallmark timepoints in cuprizone demyelination and remyelination*»

Margaritis Tsifintaris, Democritus University of Thrace, «*MilkExosOmics: A Comprehensive Relational Database for Analyzing MilkDerived Exosomal Cargo*»

BIOTECHNOLOGY-STRUCTURAL BIOLOGY

Maria-Eirini Lekka, Agricultural University of Athens & Hellenic Pasteur Institute, «*Unlocking the Mi-FAR-1 Structure: Expression and Purification of a Nematode Protein*»

Sampanai Elena, National and Kapodistrian University of Athens, «*Exploring Molecular Mechanisms of Resilience to Environmental Stress via Proteomic Analysis of the Mediterranean Plant *Cistus creticus**»

PUBLIC HEALTH

Drosos Kourounis, Hellenic Pasteur Institute, «*Reduction of Airborne Microbial Bioaerosols in areas of Public Interest, using novel Air filtration-UV Irradiation technology*»

Nikolaos Moustakas, Olga Papaggeli, Sofia Makka, Hellenic Pasteur Institute, «*Development of Photoactivate Surfaces with Antibacterial and Antiviral Activity for a Clean and Safe Environment - APOGEION –*»

MICROBIOLOGY

Maria Morakou, Hellenic Pasteur Institute & University of West Attica, «*The role of exosomal cargo as viral fingerprint in HCV infection before and after treatment with DAAs*»

Myrto Panagiotopoulou, Roskilde University, Denmark, «*Metabolic activity of vaginal microbiome*»

Odyseas-Panagiotis Tzortzatos, Hellenic Pasteur Institute, «*Effects of polyI:C and LPS on immune status and gene expression of European Sea Bass (*Dicentrarchus labrax*, L.)*»

NEUROBIOLOGY

Elsa Papadimitriou, Hellenic Pasteur Institute, «*Elucidation of the miR-124/ISX9-mediated transcriptional mechanism instructing the cell fate switch of astrocytes to induced-neurons*»

Anastasia-Konstantina Papadopoulou, Biomedical Research Foundation of the Academy of Athens, «*Cerebral lateralization for writing in left- and right-handers: Attempting to disentangle a Gordian knot*»

Christina Paschou, Hellenic Pasteur Institute, «*Failure of major proteostatic mechanisms in p.A53T- α Syn PD patient iPSC-derived astrocytes, due to lysosomal malfunction*»

Ilias Roufagalas, Hellenic Pasteur Institute, «*Morphological and transcriptomic characterization of cortical astrocytes during early experimental demyelination*»

Constantinos Sideris, Hellenic Pasteur Institute, «*Study of cellular senescence phenotypes in astrocytes derived from Parkinson's disease patient-iPSCs*»

Irini Thanou, Hellenic Pasteur Institute, «*In vivo microglial Bin1 deletion regulates neuroinflammation and Adult Neurogenesis in the mouse hippocampus*»

Evanthia Tselo, Hellenic Pasteur Institute, «*Metabolic impairment in PD-patient iPSC-derived p.A53T- α Syn astrocytes*»



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Scientific Committee

Dr. Spiros Efthimiopoulos

Professor, Department of Biology, Division of Animal and Human Physiology
Director, "Athens International Master's Programme in Neurosciences"
National and Kapodistrian University of Athens

Dr. Georgina Tzanakaki

Professor of Public Health Microbiology
Head, Laboratory Surveillance of Infectious Diseases (LSID)
Head, National Meningitis Reference Laboratory
Vice Head, Department of Public Health Policy
School of Public Health, University of West Attica

Dr. Kostas Vekrellis

Research Director, Neurobiology and Neurodegeneration
Investigator A' – Center for Basic Research Biomedical Research Foundation of the Academy of Athens (BRFAA)

Dr. Eleni Douni

Professor of Animal Biotechnology, Director of the Laboratory of Genetics,
Deputy Dean of the School of Applied Biology and Biotechnology, Deputy
Head of the Department of Biotechnology, Agricultural University of Athens
Affiliated Professor, Institute for Bioinnovation, Biomedical Sciences Research Center
'Alexander Fleming'

Organizing Committee

Vasileios Gouzouasis

Athena Boutou

Ilias Roufagalas

Anastasia Dagkonaki

Laboratory of Molecular Genetics, Department of Immunology
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17th-18th October 2024, Hellenic Pasteur Institute