17th International Symposium
Molecular Basis of Pathology and Therapy in Neurological Disorders

Thursday, October 15, 2026

09:00 **Opening Ceremony**

Session I

Advancing Human Neural Models: From Organoids to Physiologically Relevant Systems

Chairpersons:

Justyna Augustyniak *(Department of Neurochemistry, Mossakowski Medical Research Institute, PAS, Warsaw, Poland*
Department IV - Laboratory of Diagnosis and Therapy Support of Metabolic Diseases, Nalecz Institute of Biocybernetics and Biomedical Engineering, PAS, Warsaw, Poland)

09:15 - 10:00 **Laura Batlle Morera** *(Tissue Engineering Unit Centre for Genomic Regulation (CRG), Barcelona, Spain)*
Advancing Human Organoid Models Toward Physiological Relevance: Challenges and Opportunities
(format online)

10:00 - 10:30 **Ira Espuny-Camacho** *(GIGA Neuroscience, University of Liège, Liège, Belgium)*
A Human Multicellular Neuroimmune Component Cortical Organoid Model to Study Alzheimer`s Disease

10:30 - 11:00 **Leonora Buzanska** *(Department of Stem Cell Bioengineering, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)*
Modeling Physioxic Niche in Brain Cortical Organoids to Study Mitochondrial-Dependent Neuroprotection in Developing Human Brain

11:00 - 11:30 **Katarzyna Tokarska** *(The Centre for Advanced Materials and Technologies CEZAMAT, Warsaw University of Technology, Warsaw, Poland)*
Modeling the Gut-Brain Axis Using Human Organ-on-Chip System

11:30 - 12:00 **Coffee break**

12:00 - 12:20 **Koen De Gelas**
10x GENOMICS, USA
Spatial Transcriptomics in Neurological Research
(format online)

12:20 - 12:40 **Michalina Wezyk** *(Department of Neurogenetics and Functional Genomics, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)*
HELPI OPTICS
Multi-electrode Array (MEA) Profiling of Disease and Drug-Response Network Dysfunction in Human iPSC-derived Cerebral Organoid Models of Neurodegeneration

12:40 - 13:10 **Michal K. Stachowiak** *(Department of Pathology and Anatomical Sciences, University at Buffalo, Buffalo, USA)*
Advancing Human Neural Models: From Organoids to Physiologically Relevant Systems - Phase Zero studies
(format online)

13:10 - 14:45 **Lunch and Poster session**

Session II

Glial Cells in Neurodevelopmental and Neurodegenerative Diseases

Chairpersons:

Luiza Stanaszek *(NeuroRepair Department, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)*

Julien Puyal *(Department of Fundamental Neurosciences, University of Lausanne, Lausanne, Switzerland)*

15:00 - 15:30	**Julien Puyal** *(Department of Fundamental Neurosciences, University of Lausanne, Lausanne Switzerland)* **The Distinct Roles of Autophagy in Oligodendrocytes and Neurons During Perinatal Brain Injury**
15:30 - 16:00	**Anna Malik** *(Faculty of Biology, University of Warsaw, Warsaw, Poland)* **SorCS2 Deficiency Sensitizes Astrocytes to Amyloid-beta and Accelerates Alzheimer's Pathology**
16:00 - 16:20	**Przemyslaw Olewniczak** **ALTIUM** **Innovative Approaches for Studying Glial Cells in Neurodegenerative Diseases**
16:20 - 16:50	**Coffee break**
16:50 - 17:20	**Sujith Sajja** *(The Geneva Foundation, Bethesda, Maryland, USA)* **Glial Role in Blood Brain Barrier Disruption and Pathology of Blast Induced Traumatic Brain Injury** *(format online, recorded speach)*
17:20 - 17:50	**Amit Srivastava** *(Thomas Jefferson University, Philadelphia, USA)* **Coagulation Factors and Glial Activation in Amyotrophic Lateral Sclerosis Pathology**
17:50 - 18:10	**Young researcher presentation** **Zofia Klich** *(NeuroRepair Department, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)* **The role of autophagy in oligodendrocyte differentiation in an ex vivo model of neonatal hypoxia-ischemia**
18:30	**Get Together Party**

Friday, October 16, 2026

Session III

Novel Aspects of Calcium Signaling in the Central Nervous System

Chairpersons:

Joanna Gruszczynska-Biegala *(Molecular Biology Unit, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)*

Maria Kawalec *(Molecular Biology Unit, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)*

09:00 - 09:30	**Francesco Moccia** *(Department of Medicine and Health Sciences University of Molise, Campobasso,Italy)* **Exploring Ca2+ Signalling in Cerebrovascular Endothelial Cells: a Novel Player at the Neurovascular Unit**
09:30 - 10:00	**Urszula Wojda** *(Laboratory of Preclinical Testing of Higher Standard Neurobiology Center, Nencki Institute of Experimental Biology, PAS, Warsaw, Poland)* **Linking Alzheimer's Disease microRNA Biomarkers with Calcium Dyshomeostasis** *(format online)*
10:00 - 10:30	**Martin Heine** *(Institute of Developmental and Neurobiology (iDN) Functional Neurobiology; Johannes Gutenberg-University, Mainz, Germany)* **Mobility and Turnover of Presynaptic Calcium Channels**
10:30 - 11:00	**Coffee break**
11:00 - 11:30	**Karolina Pircs** *(HCEMM-SU Neurobiology and Neurodegenerative Diseases Research Group Institute of Clinical Pathophysiology Semmelweis University Budapest, Budapest, Hungary)* **Direct Neural Reprogramming: a Cellular Model of Human Brain Aging and Rejuvenation**
11:30 - 12:00	**Tito Calì** *(Department of Biomedical Sciences University of Padova, Padova, Italy)* **Split Fluorescent Tools to Unveil the Organelle Contactome and Beyond**
12:00 - 12:20	**Young researcher presentation**
12:20 - 14:00	**Lunch and Poster session**

Session IV

Neurodegenerative and Neuromuscular Diseases: From Molecular Mechanisms to Pathophysiology

Chairpersons:

Dorota Sulejczak *(Department of Experimental Pharmacology, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)*

Katarzyna Kaczynska *(Department of Respiration Physiology, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)*

14:00 - 14:30	**Silvia V. Conde** *(NOVA Medical School, Faculdade de Ciências Médicas, Universidade Nova de Lisboa, Lisbon, Portugal)* **Maternal Metabolic Dysfunction: Unraveling the Mechanisms Driving Offspring Neurobehavioral Alterations**
14:30 - 15:00	**Pawel Grieb** *(Farmacology Department Mossakowski Medical Research Institute, PAS, Warsaw, Poland)* **Streptozotocin Model of Alzheimer's Disease: Source of Artifacts or Food for Thought?**
15:00 - 15:25	**Matteo Cattaneo** **SYNCELL** **Syncell Microscoop: Microscopy-Guided Subcellular Proteomics to Uncover the Molecular Basis of Neurological Disease** *(format online)* **Iwona Zielinska** **OMIXYS** **How the precision of NULISA technology is transforming research into neurological diseases**.
15:25 - 15:55	**Magdalena Czeredys** *(Department of Stem Cell Bioengineering, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)* **Understanding Huntington's Disease Using iPSC-derived Models: Insights into Personalised Medicine**
15:55 - 16:25	**Robert Ostrowski** *(Department of Neurooncology*, Mossakowski *Medical Research Institute, PAS, Warsaw, Poland)* **Anti-glioma Agents and Hyperbaric Oxygen for Prospective Therapeutic Approaches**
16:25 - 16:55	**Anna Wilkaniec** *(Department of Cellular Signaling, Mossakowski Medical Research Institute, PAS, Warsaw, Poland)* **The Missing Link: Parkin as a Mediator of α-Synuclein-induced Behavioral Changes**
17:00	**Closing Ceremony**