



8th International PhD Students Conference

Programme

October 8-9, 2024





Tuesday, 8.10

Session 1 (chairs: Justyna Janikiewicz and Beata Siemiątkowska)

9:30 – 10:40 Conference opening

9:30 Conference opening by **PROF. AGNIESZKA DOBRZYŃ**, Director of the Nencki Institute

9:40 Welcome address by **PROF. JOANNA SZCZEPANOWSKA** (Head of the Nencki Doctoral School) and **PROF. DANIEL WÓJCIK** (Head of the Nencki PhD Studies)

9:45 Keynote lecture

PROF. BOŻENA KAMIŃSKA-KACZMAREK (LABORATORY OF MOLECULAR NEUROBIOLOGY, NENCKI INSTITUTE OF EXPERIMENTAL BIOLOGY)

Synthetic peptides restore antitumour immunity and improve immunotherapy in brain tumors.

10:35 – 10:55 Speed Talks I

BEATA KUCHARZ (LABORATORY OF NEUROMUSCULAR PLASTICITY)

The regenerative capacity of the sciatic nerve: how donor age influences early repair after sciatic nerve transplantation - a histological and single-cell RNA sequencing analysis.

OLGA BLAETH (LABORATORY OF NEUROMUSCULAR PLASTICITY)

Transplant-dependent differences in microglial activation and motor neuron survival following sciatic nerve grafting in newborn rats.

RABIA IJAZ (LABORATORY OF CELLULAR BIOPHYSICS)

Exploring S-palmitoylation dynamics in synaptic plasticity using synaptoneurosomes.

KATARZYNA SAWICKA (LABORATORY OF SPATIAL MEMORY)

Cortical Reinstatement is a direct method used to verify and clarify the validity of hippocampal indexing theory.

MAGDALENA PIETRUCH (LABORATORY OF BRAIN IMAGING)

Efficacy and candidate mechanisms of change in therapy for procrastination: a randomized controlled trial with different cognitive-behavioral protocols.

10:55 – 11:25 Coffee break

Session 2 (chairs: Barbara Pijet-Binkiewicz and Patrycja Jakubek-Olszewska)

11:25 – 12:10 Long Talks I

11:30 **WERONIKA TOMASZEWSKA** (LABORATORY FOR TRANSLATIONAL RESEARCH IN NEUROPSYCHIATRIC DISORDERS)

Interplay of serum lipids and microglia in the susceptibility to the long-term behavioral effects of adverse childhood experiences.



11:45 **ERYK DUŃSKI** (DIOSCURI CENTER FOR CHROMATIN BIOLOGY AND EPIGENOMICS)

Evolution of regulome in human astrocytes, based on iPSC-derived astrocyte models.

12:00 **MONIKA DŹWIGOŃSKA** (LABORATORY OF MOLECULAR NEUROBIOLOGY)

Hypoxic stress dysregulates functions of glioma-associated myeloid cells through epigenomic and transcriptional programs.

12:10 – 13:00 **Next Generation Scientists - perspectives, opportunities and challenges in industry**

12:10 **PROF. PAULO OLIVEIRA** (UNIVERSITY OF COIMBRA AND MITOTAG, CANTANHEDE, PORTUGAL)
Mitochondria in the pathophysiology of human disease: opportunities for technology transfer.

12:30 **DR MARTA KŁAK** (POLBIONICA, WARSZAWA)

From dreams to realization: my path from university to company.

12:45 **AGATA QANADILO** (ASTRA ZENECA POLAND)

Innovative Minds: How PhD Graduates Drive Pharmaceutical Advancements.

13:00 – 14:00 **Lunch break**

Session 3 (chairs: Marzena Stefaniuk and Salman Ahmadi)

14:00 – 14:30 **Long Talks II**

14:00 **WIKTORIA PODOLECKA** (LABORATORY OF NEUROINFORMATICS)

The role of the nasal epithelium in the generation of ketamine-dependent high frequency oscillations in rats.

14:15 **URSZULA WŁODKOWSKA** (LABORATORY OF SPATIAL MEMORY)

Global brain c-Fos mapping reveals differences in brain network engagement during navigation using visual cues of varying complexity.

14:30 – 14:50 **Speed Talks II**

SANDRA ROMANIS (LABORATORY OF NEUROBIOLOGY)

The influence of maternal high-fat diet on changes in the concentration of the obesity hormone Lipocalin 2 in the mice offspring.

SYLWIA ZAWIŚLAK (LABORATORY OF NEUROBIOLOGY)

The impact of in vitro obesity-mimicking conditions on lipocalin-2 level in mouse hippocampal cell culture.

LUIS GRILO (UNIVERSITY OF COIMBRA)

Impact of maternal obesity on offspring cardiac aging.



DANIELA ROSENDO-SILVA (UNIVERSITY OF COIMBRA)

Clinical and molecular profiling of human visceral adipose tissue reveals alterations of the vasculature and remodeling as an early hallmark of dysfunction.

BARBARA PAKUŁA (LABORATORY OF MITOCHONDRIAL BIOLOGY AND METABOLISM)

Autophagy in a cellular model depicting the progression from steatosis to steatosis with inflammation.

14:50 – 15:15 Coffee break

Session 4 (chair: Adriana Magalska)

15:15 – 16:00 Long Talks III

15:15 **BONDITA DEHINGIA** (DIOSCURI CENTER FOR CHROMATIN BIOLOGY AND EPIGENOMICS)

RNA binding proteins contribute to the consolidation of CTCF-mediated chromatin architectural features upon loss of pluripotency.

15:30 **CARLOS ACOSTA** (DIOSCURI CENTER FOR METABOLIC DISEASE)

Unraveling the role of MK5 in the regulation of skeletal muscle biology.

15:45 **KAROLINA PYTLAK** (LABORATORY OF INTRACELLULAR ION CHANNELS)

The role of mitochondrial potassium channels in damage caused by particulate matters (PMs) in bronchial epithelium.

16:00 – 18:00 Poster Session I

Networking and snacks



Wednesday, 9.10

Session 5 (chairs: Magdalena Czekalska, Jacek Wróbel)

10:00 – 11:00 Long Talks IV

- 10:00 **MAGDALENA SZPONAR** (LABORATORY OF NEUROPHYSIOLOGY OF MIND)
Developing psychiatric diagnostic tool using machine learning classification of resting-state electroencephalography.
- 10:15 **FARZAD KHANIPOUR** (LABORATORY OF EMOTIONS NEUROBIOLOGY)
mTORopathic Dysfunction in Hippocampal DG/CA3 Circuitry as a Common Etiology of Epilepsy-Associated Cognitive Comorbidities.
- 10:30 **WING SZE TSE** (LABORATORY OF CELL BIOPHYSICS)
Moving forward from rodent to human neurons: An attempt to model “Stress in a dish” by iPSC-derived human cortical neurons.
- 10:45 **JULIA SEPIELAK-ŚWIDERSKA** (LABORATORY OF MOLECULAR BASIS OF BEHAVIOUR)
Making decisions: novel method for exploring spatial choices.

11:00 – 11:15 Speed Talks III

- PAULINA BORKOWSKA** (LABORATORY OF CELL BIOPHYSICS)
The transmembrane domain of the influenza hemagglutinin influences protein fusion activity.
- SUMITA MAJHI** (LABORATORY OF CYTOSKELETON AND CILIA BIOLOGY)
Exploring the nexin-dynein regulatory complex in motile cilia.
- SALMAN AHMADI** (LABORATORY OF CYTOSKELETON AND CILIA BIOLOGY)
Unravelling the Structural Puzzle of Ciliary N-DRC Complex in Tetrahymena thermophila.
- SAJJAD IQBAL** (DIOSCURI CENTER FOR CHROMATIN BIOLOGY AND EPIGENOMICS)
Non-canonical functions of ATP in gene regulation.

11:15 – 11:45 Coffee break

Session 6 (chairs: Oksana Piven, Toufic Kassouf)

11:45 – 12:30 Long Talks V

- 11:45 **ALICJA TARGOŃSKA** (LABORATORY OF CYTOMETRY)
The influence of autophagy on exosomes secretion at different stages of vascular smooth muscle cells senescence.
- 12:00 **JOANNA LEWANDOWSKA** (LABORATORY OF INTRACELLULAR ION CHANNELS)
Redox and light modulation of mitochondrial large conductance Ca²⁺- activated potassium channel.
- 12:15 **KATIA AL GHOZ** (DIOSCURI CENTER FOR METABOLIC DISEASE)
Unraveling molecular mechanism and metabolic consequences of the ERK3/MK5-dependent signaling in adipose tissue.



12:30 – 13:00 Speed Talks IV

SABAHAT GULZAR (LABORATORY OF CELLULAR METABOLISM)

Exploring the impact of Duchenne muscular dystrophy (DMD) brain endothelium calcium dynamics.

AGATA WYDRYCH (LABORATORY OF MITOCHONDRIAL BIOLOGY AND METABOLISM)

Impaired metabolism and altered proteomic profile of MPAN patients' fibroblasts.

NABODIT BHATTACHARYA (DIOSCURI CENTER FOR CHROMATIN BIOLOGY AND EPIGENOMICS)

Defining the molecular consequences of haploinsufficiency in CBP and p300 histone acetyltransferases underpinning the Rubinstein-Taybi Syndrome.

PATRYCJA ROSA (LABORATORY OF MOLECULAR NEUROBIOLOGY)

Dissecting mechanisms of mutant TSC2 pathology with single cell transcriptomics of human cerebral organoids derived from induced pluripotent stem cells.

SZYMON LIPIEC (LABORATORY OF MOLECULAR NEUROBIOLOGY)

Characterisation of microglia-pediatric high-grade glioma interactions and their reprogramming by hypoxia.

EDYTA BULANDA (LABORATORY OF HOST-MICROBIOME INTERACTIONS)

The influence of microbial metabolites on brain immunity.

MAGDALENA WOLSKA (LABORATORY OF HOST-MICROBIOME INTERACTIONS)

Microbiota-derived metabolite improves lung inflammation by modulating the metabolism of alveolar macrophages.

13:00 – 15:00 Poster Session II

Networking and snacks

Session 7 (chairs: Anna Beroun and Dominika Malińska)

15:00 – 16:10 Closing session

15:00 Keynote lecture

PROF. MARCIN DRĄG (DEPARTMENT OF CHEMICAL BIOLOGY AND BIOIMAGING, WROCLAW UNIVERSITY OF SCIENCE AND TECHNOLOGY)

The unnatural amino acids phenomenon in the search for new drugs and diagnostic tools.

15:50 Closing remarks and best talks/posters awards

17:00 – Integration party at Lolek Pub



Poster Session I

- 1.01. **ANNA REDEŁ** (LABORATORY OF LANGUAGE NEUROBIOLOGY) *Brain development and language deficits in Neurodevelopmental Disorders – a research plan.*
- 1.02. **ANJALY YADAV** (LABORATORY OF EMOTIONS NEUROBIOLOGY) *The role of the prelimbic cortex in transition from out-group to in-group social interactions.*
- 1.03. **AGNIESZKA GLICA** (LABORATORY OF LANGUAGE NEUROBIOLOGY) *Is there evidence for the neural noise hypothesis in dyslexia? Insights from EEG and MRS results.*
- 1.04. **PAWEŁ JAKUSZYK** (LABORATORY OF BRAIN IMAGING) *Lesion informed assessment of white matter damage in MS and NMOSD.*
- 1.05. **KATARZYNA WASILEWSKA** (LABORATORY OF LANGUAGE NEUROBIOLOGY) *fMRS study on reading-related metabolite changes.*
- 1.06. **MAGDALENA WIT** (DIOSCURI CENTRE FOR METBOLIC DISEASES) *Dietary lipids-evoked remodeling of lipid droplets' proteome in small intestine.*
- 1.07. **JUSTYNA DOMAŃSKA** (LABORATORY OF PRECLINICAL TESTING OF HIGHER STANDARDS) *Comparing Western diet and LPS as inflammation-related risk factors of sporadic Alzheimer's disease.*
- 1.08. **DAWID STEPNIK** (LABORATORY OF CYTOMETRY) *Specific immune signatures of T cells as biomarkers of the neuro Post-COVID Syndrome and predictors of long-term health dysfunctions.*
- 1.09. **ZUZANNA ŁUCZAK-SOBOTKOWSKA** (LABORATORY OF MOLECULAR NEUROBIOLOGY) *Organotypic brain slice cultures as a useful model in microglia research.*
- 1.10. **ZEINAB BEDROOD** (LABORATORY OF CELL BIOPHYSICS) *Study of the interactions between 5-HT7 and NMDA receptors at the single dendritic spine level.*
- 1.11. **KLAUDIA KRYSZTECKA** (LABORATORY OF NEUROPHYSIOLOGY OF MIND) *Electrophysiological markers of high and low temporal processing efficiency.*
- 1.12. **MONIKA PUCHALSKA** (LABORATORY OF MOLECULAR BASIS OF BEHAVIOR) *PSD-95-dependent synaptic transmission in the dorsal CA1 area (dCA1) of the hippocampus is required for updating, but not formation, of contextual memories.*
- 1.13. **KINGA NAZARUK** (LABORATORY OF EPILEPTOGENESIS) *AQP4 in circadian rhythm.*
- 1.14. **ANIK KUMAR DAS** (LABORATORY OF EMOTIONS NEUROBIOLOGY) *Mapping c-Fos expression using the iDISCO technique.*
- 1.15. **KEYVAN HEMMATVAND** (DIOSCURI CENTRE FOR CHROMATIN BIOLOGY AND EPIGENOMICS) *Role of GPRC5B in Astrocyte Functions; Calcium Dynamics, and Inflammatory Response in the Human Induced Pluripotent Stem Cell-derived Astrocytes (iAstrocytes).*
- 1.16. **OMID SABERI** (LABORATORY OF CALCIUM BINDING PROTEINS) *Interaction of CacyBP/SIP with Ribosomal Protein L6 in neuroblastoma NB2a cells.*
- 1.17. **RIDA FATIMA** (LABORATORY OF MOLECULAR MEDICAL BIOCHEMISTRY) *The role of stearyl-CoA desaturase 4 in regulating AMPK signaling and cytoskeletal organization in cardiomyocytes.*
- 1.18. **WERONIKA FICERMAN** (LABORATORY OF MOLECULAR BASIS OF CELL MOTILITY) *Lack of unconventional myosin VI induces changes in the organization of the subcellular compartments structure in the heart and cardiac mesenchymal stem/stromal cells.*



Poster Session II

- 2.01. **FREEHA KANWAL** (DIOSCURI CENTRE FOR METABOLIC DISEASES) *Protein Kinase D2 promotes chylomicron-mediated transport of triglycerides.*
- 2.02. **SIMRAN YADAV** (LABORATORY OF PRECLINICAL TESTING OF HIGHER STANDARD) *Evaluation of Individual miRNA Biomarker Candidates in Blood Plasma for Detection of Alzheimer's Disease in the pre-dementia and dementia disease stages.*
- 2.03. **NATANIEL STEFANOWSKI** (LABORATORY OF CELL SIGNALING AND METABOLIC DISORDERS) *Effect of BbK1 peptide on pancreatic β -cell insulin secretion and insulin signalling pathway in skeletal muscle cells subjected to lipotoxicity.*
- 2.04. **NAMRA BILAL** (LABORATORY OF MOLECULAR MEDICAL BIOCHEMISTRY) *The role of SCD1 in cardiomyocyte maturation - focus on the AMPK pathway.*
- 2.05. **SHOHREH POURMOMEN JORSHARI** (LABORATORY OF CELL BIOPHYSICS) *Role of 5HT7 Receptor activation in depression and synaptic plasticity: mechanisms involving NMDAR palmitoylation and activity modulation.*
- 2.06. **MARIA WRZOSEK** (LABORATORY OF NEUROPHYSIOLOGY OF MIND) *Role of substantia nigra in working memory – single neuron study.*
- 2.07. **JUSTYNA WIŚNIEWSKA** (LABORATORY OF NEURONAL PLASTICITY) *DRD1 And DRD2 in central amygdala in cocaine memory recall: A DREADD-based study.*
- 2.08. **HANNA GÓRZECKA** (LABORATORY OF LANGUAGE NEUROBIOLOGY) *Neural noise in children with neurodevelopmental disorders.*
- 2.09. **ANNA MADECKA** (LABORATORY OF EMOTIONS NEUROBIOLOGY) *The functional role of the prelimbic microcircuits in encoding familiar and novel social stimuli.*
- 2.10. **ADAM DATTA** (LABORATORY OF NEUROINFORMATICS) *Towards objective characterization and interpretation of cytoarchitectural properties of the primate cerebral cortex.*
- 2.11. **KAROLÍNA HRŮZOVÁ** (INSTITUTE OF PHYSIOLOGY, CZECH ACADEMY OF SCIENCES) *Modulating behavior through inhibition of parvalbumin-positive interneurons in the prefrontal cortex.*
- 2.12. **KAROLINA ZIELIŃSKA** (LABORATORY OF LANGUAGE NEUROBIOLOGY) *Oxytocin level and language breakdown in children with neurodevelopmental disorders.*
- 2.13. **MARTA AGNIESZCZAK** (LABORATORY OF BRAIN IMAGING) *Exploring cognition in radiologically isolated syndrome: A BICAMS-based assessment of processing speed, verbal, and visuospatial memory.*
- 2.14. **MARTA PAŻ** (LABORATORY OF LANGUAGE NEUROBIOLOGY) *How elderly men and women reflect on themselves and others.*
- 2.15. **PAULINA PILANC** (LABORATORY OF MOLECULAR NEUROBIOLOGY) *Reactivating antitumor immunity in gliomas with osteopontin/integrin blocking peptide.*
- 2.16. **MATEUSZ SZYMAŃSKI** (LABORATORY OF CYTOMETRY) *Combined treatment with ISRIB and tyrosine kinase inhibitors induce changes in cell signaling pathways in myeloid neoplasms with PTPN11 mutations.*
- 2.17. **MISBAH ABBAS** (DIOSCURI CENTRE FOR CHROMATIN BIOLOGY AND EPIGENOMICS) *DEAD box helicase 5 (Ddx5) regulates the three-dimensional organisation of heterochromatin upon exit from pluripotency.*
- 2.18. **OKSANA OKHRYMOVYCH** (SPATIAL EPIGENETICS LABORATORY) *The role of NONO-1 and paraspeckles in C. elegans development.*



Organizers:

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Long Talks: *Anna Beroun, Aneta Dobosz, Katarzyna Poleszak*

Speed Talks: *Bogna Badyra, Aleksandra Elert-Miklaszewska, Magdalena Lebedzińska-Arciszewska*

Posters: *Łukasz Bijoch, Katarzyna Leszczyńska, Tomasz Wójtowicz*

