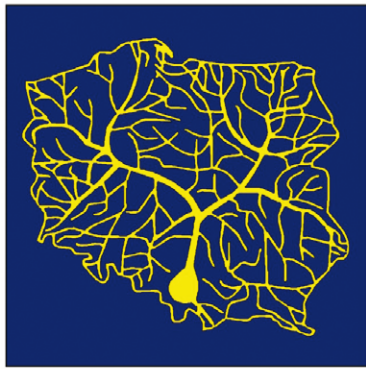




POLISH NEUROSCIENCE SOCIETY

10TH INTERNATIONAL CONGRESS

**ŁÓDŹ, POLAND,
SEPTEMBER 21ST - 24TH**



FUNDED BY POLISH ACADEMY OF SCIENCE

**UNDER HONORARY PATRONAGE OF
RECTOR OF THE LODZ UNIVERSITY
CITY OF LODZ MAYOR
PROVINCE OF LODZ MARSHAL**

Organizers: Polish Neuroscience Society (PNS)
Department of Neurobiology, Department of Neurophysiology (University of Lodz)
Department of Pharmacodynamics (Medical University of Lodz)

Co-organizers: Nencki Institute of Experimental Biology PAS, Warsaw
Mossakowski Medical Research Centre PAS, Warsaw
International Institute of Molecular and Cell Biology, Warsaw
Institute of Pharmacology PAS, Cracow
Committee of Neurobiology of Polish Academy of Sciences (CN PAS)
Committee of Neurological Sciences of Polish Academy of Sciences (CNS PAS)
Committee of Physiology of Polish Academy of Sciences (CP PAS)
Committee of Therapy and Drug Research of Polish Academy of Sciences (CTDR PAS)

Chairperson: Julita Czarkowska-Bauch - President of Polish Neuroscience Society

Scientific Program Committee:

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Vice-Chairperson: Małgorzata Skup, Jan Konopacki

Members: Henryk Majczyński, Katarzyna Łukasiuk, Barbara Przewłocka, Jolanta B. Zawilska

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Ministry of Science and Higher Education of Poland

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International Brain Research Organization (IBRO)

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The City of Lodz Office

Committee of Neurobiology of Polish Academy of Sciences (CN PAS)

Committee of Neurological Sciences of Polish Academy of Sciences (CNS PAS)

Committee of Physiology of Polish Academy of Sciences (CP PAS)

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The International Institute of Molecular and Cell Biology in Warsaw (IIMCB)
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IIMCB is one of the most modern country's research institutes in the field of molecular biomedicine in Poland. Research topics cover the wide area of cancer biology, neurobiology, protein structural biology, intracellular communication, dendritic tree formation, bioinformatics/computer modeling, enzyme engineering and mitochondrial biogenesis etc. Nine research groups comprise the structure of IIMCB: Department of Molecular Biology (M. Żylicz), Lab of Bioinformatics and Protein Engineering (JM. Bujnicki), Lab of Structural Biology MPG/PAN (M. Bochtler), Lab of Neurodegeneration (J. Kuźnicki), Lab of Cell Biology (M. Międzyńska), Lab of Molecular and Cellular Neurobiology (J. Jaworski), Lab of Cell Cortex Mechanics MPG/PAN in Dresden (E. Paluch), Lab of Protein Structure (M. Nowotny) and Lab of Mitochondrial Biogenesis (A. Chacińska).

Involvement of the International Advisory Board (IAB), the rules of recruitment of all faculty members through international competition and lack of tenure employment make it unique among Polish research institutions. Created with the support of UNESCO, Polish Academy of Sciences (PAS) and the Polish Government, the Institute started its activity in 1999. The principles of organisation of the Institute are distinct and differ from other research institutes in the country: an important body of the Institute is the International Advisory Board, acting as the Scientific Council; the leader of each research team of the Institute is selected in an international competition; group leader's initial employment is limited to a five-year contract; three years after beginning the research work, progress of research is assessed by the IAB. The Institute is financed in part from the national budget (statutory subvention; budgetary subvention via PAN) and in part from other sources (Ministry of Science and Higher Education), as well as through numerous grants from: Framework Programs of EU, European Research Council (ERC), Max Planck Society (MPG), Howard Hughes Medical Institute (HHMI), European Molecular Biology Organisation (EMBO), National Institutes of Health (NIH), Wellcome Trust, Foundation for Polish Science (FNP) etc. About 80% of funds arrive as competitive grant awards received by the group leaders. Currently, there are about 140 researchers, including 50 PhD students. IIMCB was ranked first among 36 institutes in the section of Biological Sciences in parametric evaluation of Polish research and academic institutions.

The research equipment of the Institute together with shared resources of neighboring institutes of the whole Ochota campus set the high technical standard of research conducted here. IIMCB is a place to which it is worth returning after a successful post-doctoral stay abroad – IIMCB counteracts brain drain. Here researchers have a chance not only to stand up a scientific challenge but also to taste early independence in leading their own laboratories.

**TENTH INTERNATIONAL CONGRESS
OF THE POLISH NEUROSCIENCE SOCIETY**

PROGRAMME

Wednesday, September 21

- 13.00 – 19.00 Registration
Location: Hall, Faculty of Law and Administration (FLA)
- 14.00 – 16.00 General Assembly of the Polish Neuroscience Society
Location: “Red” theatre, FLA
- 16.00 – 16.30 Coffee break
- 16.30 – 17.00 **Opening ceremony**
Location: “Red” theatre, FLA
Welcome addresses (Julita Czarkowska-Bauch, President of the Polish Neuroscience Society)
- 17.00 – 17.45 **Opening lecture**
Sponsored by: IBRO
Elżbieta Jankowska (University of Göteborg, Göteborg, Sweden)
Integrative properties of spinal interneurons
Introduced by: Julita Czarkowska-Bauch
- 18.00 – 18.45 **Konorski’s lecture**
Sponsored by: IBRO
Pico Caroni (Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland)
Synapse rearrangements in learning and memory
Introduced by: Małgorzata Skup
- 19.00 Get-Together Reception
Location: Hall, FLA

**Thursday, September 22
(Morning Sessions)**

- 08.15 – 08.45 **Special lecture** (Kawa.ska Presentation)
Location: “Red” theatre, FLA
Rafał Płatek¹, Jarosław Korczyński², Małgorzata Skup¹ (¹Laboratory for Reinnervation Processes;
²Laboratory for Confocal Microscopy, Nencki Institute of Experimental Biology, Warsaw, Poland)
Visualization of large scale objects using confocal microscope Leica TCS LSI
- 09.00 – 09.45 **Plenary lecture**
Location: “Red” theatre, FLA
Brian H. Bland (The University of Calgary, Calgary, Canada)
Deep brain stimulation of the posterior hypothalamic nucleus as an alternate therapeutic target for Parkinson’s disease
Introduced by: Jan Konopacki
- 09.50 – 10.10 **Young Investigator Lecture**
Location: “Red” theatre, FLA
Marta Mikosz (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)
(Fe)male empathy: Sex-specific neural correlates of socially transferred fear
Introduced by: Jolanta Zawilska
- 10.10 – 10.30 Coffee break
- 10.10 – 11.40 Kawa.ska Workshop

10.30 – 11.30 **SYMPOSIA****Symposium I: Signaling and Plasticity at Local Neuronal Networks***Chairperson:* Jerzy Mozrzymas (Wroclaw Medical University, Wroclaw, Poland)

Marco Capogna (MRC Unit, Oxford, UK)

Slow GABA-A receptor-mediated synaptic response: cell types, mechanisms and physiological role

Zoltan Nusser (Institute of Experimental Medicine, HAS, Budapest, Hungary)

Synaptic connectivity in the olfactory network

Malgorzata Kossut (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Immediate early genes in plasticity of cortical columns

Jerzy W. Mozrzymas (Wroclaw Medical University, Wroclaw, Poland)

Role of metalloproteinases in synaptic plasticity in the hippocampal mossy fiber-CA3 pathway

Symposium II: Stem Cells in Neurodegenerative Diseases - Time for Clinical Translation?*Chairperson:* Barbara Łukomska (Mossakowski Medical Research Centre PAS, Warsaw, Poland)

Krystyna Domańska-Janik (NeuroRepair Department, Mossakowski Medical Research Centre PAS, Warsaw, Poland)

Therapeutic promise of adult stem cell populations

Piotr Walczak (The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA)

Current status of non-invasive cellular imaging of cells transplanted into CNS: advantages and limitations

Brigitte Onteniente (INSERM Evry, France)

Human induced pluripotent stem cells for stem cell therapy in stroke

Alexander Storch (University of Technology, Dresden, Germany)

Transplantation in Parkinson's disease: will stem cells help to reenter the clinical arena?

Symposium III: Endovanilloids for Pain Control and Beyond*Chairperson:* Katarzyna Starowicz (Institute of Pharmacology PAS, Krakow, Poland)

Vincenzo Di Marzo (Consiglio Nazionale delle Ricerche, Pozzuoli, Naples, Italy)

Pain control between cannabinoid and vanilloid receptors: cooperations and counteractions

Istvan Nagy (Imperial College London, London, UK)

Effects of the endogenous agent anandamide on nociceptive primary sensory neurons

Barbara Costa (University of Milano-Bicocca, Milano-Bicocca, Italy)

The role of the dual fatty acid amide hydrolase/TRPV1 blocker, N-arachidonoyl-serotonin, in inflammation and hyperalgesia

Malgorzata Filip (Institute of Pharmacology PAS, Krakow, Poland)

An impact of enhanced endocannabinoid/endovanilloid neurotransmission on the behavioral effects of cocaine in rats

12.30 – 14.00 Lunch

*Location: University of Lodz Convention Centre***Thursday, September 22
(Afternoon Sessions)**14.00 – 14.45 **Plenary lecture***Location: "Red" theatre, FLA*

Daniel Choquet (UMR 5091 CNRS Université Bordeaux, Bordeaux, France)

A nanoscale view into the dynamic of AMPA receptor organization in synapses

Introduced by: Leszek Kaczmarek

14.45 – 15.00 Coffee break

6 Programme

14.45 – 16.00 Kawa.ska Workshop

15.00 – 17.00 **SYMPOSIA**

Symposium IV: Neural Stem Cells and Biomaterials

Chairperson: Leonora Buzanska (Mossakowski Medical Research Centre PAS, Warsaw, Poland)

Pavla Jendelova (Institute of Experimental Medicine, ASCR, Prague, Czech Republic)

Nanotechnology in regenerative medicine of the brain and spinal cord

Jack Price (Institute of Psychiatry, King's College London, London, UK)

Neural stem cells as therapeutics and cellular models of disease

Francois Rossi (Joint Research Centre, IHCP, Brussels, Belgium) Microfabrication techniques and surface functionalisation for the culture of neural stem cells

Marzena Zychowicz (Mossakowski Medical Research Centre PAS, Warsaw, Poland)

Bioactive domains controlling neural stem cells fate decisions

Symposium V: Molecular Mechanisms of Neurodegenerative Diseases

Chairperson: Grzegorz Kreiner, Irena Nalepa (Institute of Pharmacology PAS, Krakow, Poland)

Grzegorz Kreiner (Institute of Pharmacology PAS, Krakow, Poland)

Genetic modelling of neurodegenerative diseases in mice

Rosanna Parlato (German Cancer Research Center, Heidelberg, Germany)

Cellular stress, nucleolar damage and neurodegeneration

Jan Rodriguez Parkitna (Institute of Pharmacology PAS, Krakow, Poland)

The role of Creb in neurodegenerative diseases

Birgit Liss (University of Ulm, Ulm, Germany)

Differential function of dopamine midbrain neurons in health and disease: role of ion channels

Symposium VI: Neuroinformatics Advances in Massive Multielectrode Electrophysiology: from Nanoneuroengineering to Brain-Machine Interfacing

Chairperson: Daniel Wojcik (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Michele Giugliano (University of Antwerp, Antwerp, Belgium)

Nanomaterials/neuronal hybrid systems first steps in nano-neurosciences

Gaute Einevoll (Norwegian University of Life Sciences, Akershus, Norway)

Mathematical modeling of extracellular potentials in the brain: results and possibilities

Piotr Durka (University of Warsaw, Warsaw, Poland)

Neuroinformatics and brain-computer interfaces: Svarog.pl and OpenBCI.pl

Szymon Łęski (Nencki Institute of Experimental Biology, PAS, Warsaw, Poland)

Source reconstruction methods in analysis of multielectrode recordings

17.00 – 17.30 Coffee break

17.30 – 19.00 **POSTER SESSION I**

Location: corridors, FLA

Friday, September 23 (Morning Sessions)

09.00 – 09.45 **Plenary lecture**

Location: "Red" theatre, FLA

Tamas Freund (Institute of Experimental Medicine, Hungarian Academy of Sciences, Budapest, Hungary)

Hippocampal interneuron types specifically related to complex behaviours

Introduced by: Katarzyna Łukasiuk

09.50 – 10.10 **Young Investigator Lecture***Lecture: "Red" theatre, FLA*

Monika Zapaśnik (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Effects of pattern deprivation on the development of the motion-sensitive posterior medial lateral suprasylvian (PMLS) visual area of the cat as revealed by zif268 gene expression

Introduced by: Jolanta Zawilska

10.10 – 10.30 Coffee break

10.10 – 11.40 Kawa.ska Workshop

10.30 – 12.30 **SYMPOSIA****Symposium VII: Neuronal Nuclear Architecture in Health and Disease***Chairperson:* Grzegorz Wilczynski (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Marion Cremer, (Ludwig-Maximilians University, Munich, Germany)

Nuclear architecture - an epigenetic mechanism for the regulation of nuclear functions

Michał Hetman, (University of Louisville, Louisville, USA)

Multitasking by the neuronal nucleolus: stress sensing and neurotrophic responses

Marcin Ryłski, (Center of Postgraduate Medical Education, Warsaw, Poland)

Epigenetic regulation of matrix metalloproteinase gene expression in the rat brain

Grzegorz Wilczynski, (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Architectural changes in the neuronal nucleus during epileptogenesis

Symposium VIII: Burying Fear Memories in the Brain*Chairperson:* Ewelina Knapska (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Stephen Maren, (University of Michigan, Ann Arbor, USA)

Neural circuit for fear renewal

Ewelina Knapska, (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Cellular basis of extinction of conditioned fear and its renewal

Farahnaz Sananbenesi, (European Neuroscience Institute, Goettingen, Germany)

The formin 2 protein is required for the remodeling of consolidated memories

Aleksandra Wiśłowska-Stanek, (Department of Experimental and Clinical Pharmacology, Medical University of Warsaw, Warsaw, Poland)

Neurobiological mechanisms of emotional responses in high and low anxiety rats

Symposium IX: Neuropeptides in Cell Death and Survival: Future Therapeutic Targets*Chairperson:* Paulina Sokolowska, Jolanta Zawilska (Institute for Medical Biology PAS, Lodz, Poland)

Illana Gozes (Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel & Allon Therapeutics Inc., Vancouver, BC, Canada)

Neuroprotection and the cytoskeleton: updates on the drug candidate, davunetide

Maria Śmiałowska (Institute of Pharmacology PAS, Krakow, Poland)

The potential relevance of neuropeptide Y (NPY) and NPY receptors in neuroprotection

Marc Laburthe (Bichat-Beaujon Research Center, Paris, France)

Orexins, OX receptors and apoptosis

Paulina Sokolowska (Institute for Medical Biology PAS, Lodz, Poland)

Effects of orexins on survival of the primary neuronal and glial cell cultures

12.30 – 14.00 Lunch

Location: University of Lodz Convention Centre

**Friday, September 23
(Afternoon Sessions)**

- 14.00 – 14.45 **Plenary lecture**
Location: “Red” theatre, FLA
 Marshall Devor (Institute of Life Sciences, Center for Research on Pain, Hebrew University of Jerusalem, Jerusalem, Israel)
Mechanisms associated with loss of consciousness
 Introduced by: Katarzyna Starowicz
- 14.45– 15.00 Coffee break
- 14.45 – 16.00 Kawa.ska Workshop
- 15.00 – 17.00 **SYMPOSIA**
- Symposium X: Ca²⁺ Signaling in Neuronal Development, Function and Degeneration**
Chairperson: Urszula Wojda (International Institute of Molecular and Cellular Biology, Warsaw, Poland)
- Per Uhlen (Karolinska Institutet, Stockholm, Sweden)
 Calcium signaling networks in neural progenitor cells critically control cell division
- Jose R. Naranjo (Centro Nacional de Biotecnología C/Darwin, Madrid, Spain)
 A role for the Ca²⁺-dependent repressor dream in the onset and progression of Huntington disease
- Anna Filipek (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)
 S100A6 and its binding partners in nervous system
- Urszula Wojda (International Institute of Molecular and Cellular Biology, Warsaw, Poland)
 Alzheimer’s disease as a calciumopathy
- Symposium XI: Circadian Plasticity in the Nervous System**
Chairperson: Elzbieta Pyza (Jagiellonian University, Krakow, Poland)
- Olivier Bosler (Centre de Neurobiologie et Neurophysiologie de Marseille, CNRS-Université de la Méditerranée, Marseille, France)
 Nycthemeral changes in synaptic organization of the suprachiasmatic nucleus
- Malgorzata Jasinska (Jagiellonian University Medical College, Krakow, Poland)
 Daily plasticity of the mouse barrel cortex
- Rafael Cantera (Instituto de Investigaciones Biologicas Clemente Estable, Montevideo, Uruguay)
 Circadian changes in synapse ultrastructure
- Elzbieta Pyza (Jagiellonian University, Krakow, Poland)
 Clock-controlled daily remodeling of neurons and synaptic contacts in the visual system of *Drosophila*
- Symposium XII: In Search of the Role of Adult Brain Neurogenesis**
Chairperson: Robert K. Filipkowski (University of Finance and Management, Warsaw, Poland)
- Sebastian Jessberger (Swiss Federal Institute of Technology (ETH) Zürich, Switzerland)
 Gene expression profiling reveals a novel mechanism regulating adult neurogenesis
- Marzena Maćkowiak (Institute of Pharmacology PAS, Krakow, Poland)
 PSA-NCAM proteins in hippocampal adult neurogenesis
- Robert K. Filipkowski (University of Finance and Management, Warsaw, Poland)
 Cyclin D2 knock-out mice as a tool to investigate the role of adult neurogenesis
- Paul W. Frankland (Hospital for Sick Children, Toronto, Canada)
 Integration of adult-generated neurons into hippocampal memory circuits
- 17.00 – 17.30 Coffee break

17.30 – 19.00 **POSTER SESSION II**
Location: corridors, FLA

20.00 Gala Dinner
Location: Poznanski Palace

Saturday, September 24
(Morning Sessions)

09.00 – 09.45 **Plenary lecture**
Location: “Red” theatre, FLA

Jacek Kuźnicki (International Institute of Molecular and Cellular Biology & Nencki Institute of Experimental Biology, PAS, Warsaw, Poland)

Small ion and large problem – calcium and Alzheimer’s disease

Introduced by: Andrzej Szutowicz

09.50 – 10.10 **Young Investigator Lecture**

Maciej M. Jankowski (University of Gdansk, Poland)

Effects of cocaine on the distribution of lymphocyte subsets in the spleen of rats: possible involvement of dopamine receptors

Introduced by: Jolanta Zawilska

10.10 – 10.30 Coffee break

10.30 – 12.00 **SYMPOSIA**

Symposium XIII: Reversal of Brain Dysfunction Induced by Aging

Chairperson: Grażyna Niewiadomska (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Gernot Riedel (School of Medical Sciences, University of Aberdeen, Aberdeen, UK)

Mechanisms of behavioural flexibility in mice – alteration of cognitive demand induced by ageing

Eddy A. Van der Zee, (University of Groningen, Groningen, Holland)

Physical exercise improves memory acquisition and retrieval: relationship with hippocampal neurogenesis and neuronal activation

Thomas Arendt (Paul Flechsig Institute for Brain Research, University of Leipzig, Leipzig, Germany)

Chromosomal copy number variation in the normal human brain and in Alzheimer’s disease

Anna Mietelska-Porowska (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Development of an animal model of human tauopathy by intracellular administration of tau protein in the rat

Symposium XIV: Social Interactions - Beyond Anxiety

Chairperson: Paweł M. Boguszewski (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Paweł M. Boguszewski (Nencki Institute of Experimental Biology PAS, Warsaw, Poland)

Social interaction in rodents - contemporary approach to animal behavior

Markus Wöhr (Experimental and Physiological Psychology, Philipps-University of Marburg, Marburg, Germany)

Ultrasonic communication in rodents: genes, brain and behavior

Marcel van Gaalen (Abbott Laboratories GPRD, Ludwigshafen, Germany)

Measuring social interactions in drug discovery

Marek Wieczorek (University of Lodz, Lodz, Poland)

Social interaction in rodents - now and the future (panel discussion)

Symposium XV: Serotonin (5-HT)_{2c} Receptor Control Over Brain Physiology and Pathophysiology: Molecular, Neurochemical and Behavioral Correlates

Chairperson: Malgorzata Filip (Institute of Pharmacology PAS, Krakow, Poland, Faculty of Pharmacy, Jagiellonian University College of Medicine, Krakow, Poland)

Umberto Spampinato (Neurocentre Magendie, Bordeaux 2 University, Inserm, U862, Bordeaux, France)
5-HT_{2c} receptor control of mesoaccumbens dopamine system activity: behavioral, neurochemical and molecular correlates

Magdalena Zaniewska (Institute of Pharmacology PAS, Krakow, Poland)
Bi-directional interaction between nicotine and serotonin (5-HT)_{2c} receptors – behavioural and molecular aspects

Malgorzata Filip (Institute of Pharmacology PAS & Faculty of Pharmacy, Jagiellonian University College of Medicine, Krakow, Poland)
Therapeutic potential of 5-HT_{2c} receptor ligands towards cocaine addiction

Lora Heisler, (University of Cambridge, Cambridge, UK)
5-HT_{2c} receptor ligands in the treatment of obesity and type 2 diabetes

12.30 – 14.00 Lunch

Location: University of Lodz Convention Centre

14.00 – 14.45 **Plenary lecture**

Location: “Red” theatre, FLA

Agnieszka Słowik (Jagiellonian University, Krakow, Poland)

Application of genetics in stroke

Introduced by: Krystyna Domańska-Janik

14.50 – 15.10 **Closing Ceremony**

Location: “Red” theatre, FLA