

# 8th International Congress of Pathophysiology – Detailed Scientific Programme

## Wednesday, September 5, 2018

18:00–19:00, KEYNOTE LECTURE, Plenary hall

**Chairperson:** Oľga Pecháňová, Slovakia

**Speaker:** Pavel Hamet, Canada

**Lecture title:** Relative importance of clinical vs. genomic risk determinants in pathophysiology of diabetes complications

## Thursday, September 6, 2018

8:30–10:30, SYMPOSIUM, Hall 1

### REDOX REGULATION IN PATHOPHYSIOLOGY OF CARDIOVASCULAR AND NEURODEGENERATIVE DISEASES

**Chairperson 1:** Samuel H. H. Chan, Taiwan

**Chairperson 2:** Ima Dovinová, Slovakia

**Speaker 1:** Julie Y. H. Chan, Taiwan (30 minutes)

**Lecture title:** Tissue oxidative stress in the programming of organ injury associated with metabolic syndrome of developmental origin

**Speaker 2:** Samuel H. H. Chan, Taiwan (30 minutes)

**Lecture title:** Brain-derived neurotrophic factor (BDNF) as an endogenous antioxidant in animal models of disease

**Speaker 3:** Vittorio Calabrese, Italy (30 minutes)

**Lecture title:** Aging and Parkinson's Disease: Inflammaging, neuroinflammation and biological remodeling as key factors in pathogenesis

**Speaker 4:** Ima Dovinová, Slovakia (15 minutes)

**Lecture title:** Aberrant redox regulation and risk markers development in cardiovascular diseases

**Speaker 5:** Güliz Armagan, Turkey (15 minutes)

**Lecture title:** Regulation of Nrf2/ARE pathway through GSK-3beta inhibition in neurodegeneration

8:30–10:30, SYMPOSIUM, Hall 2

### TRANSLATIONAL NEUROSCIENCE OF MENTAL DISORDERS

**Chairperson 1:** Jianzhi Wang, China

**Chairperson 2:** Igor Riečanský, Slovakia

**Speaker 1:** Jianzhi Wang, China (30 minutes)

**Lecture title:** Identification of pBLA-vCA1 circuit and its role in emotion-modulated spatial memory

**Speaker 2:** Gábor Csukly, Hungary (30 minutes)

**Lecture title:** EEG markers of early cognitive decline in mild cognitive impairment

**Speaker 3:** Jiří Horáček, Czech Republic (30 minutes)

**Lecture title:** The translational approach to modelling schizophrenia: pharmacological studies in humans and rats

**Speaker 4:** Igor Riečanský, Slovakia (15 minutes)

**Lecture title:** An emerging role of nitric oxide in schizophrenia

**Speaker 5:** Daniela Ježová, Slovakia (15 minutes)

**Lecture title:** Potential pathophysiological role of aldosterone in major depressive disorder

**8:30–10:30, CLINICAL SYMPOSIUM, Hall 3**

**CARDIOLOGY: FROM BENCH TO BEDSIDE**

**Chairperson 1:** Robert Mistrík, Slovakia

**Chairperson 2:** Ľudovít Paulis, Slovakia

**Speaker 1:** Fedor Šimko, Slovakia (30 minutes)

**Lecture title:** Anticoagulation independent effects of oral anticoagulants: On the search for the vasculo-protective effect of rivaroxaban  
(sponsored by Bayer, spol. s r. o.)

**Speaker 2:** Ľudovít Paulis, Slovakia (30 minutes)

**Lecture title:** Means for experimental and clinical RAAS profile modulation

**Speaker 3:** Oliver Domenig, Austria (30 minutes)

**Lecture title:** Angiotensin based biomarkers for molecular profiling and drug efficacy monitoring in hypertension  
(sponsored by Attoquant Diagnostics GmbH)

**Speaker 4:** Robert Mistrík, Slovakia (30 minutes)

**Lecture title:** Introduction to a comprehensively annotated LC/MSn database: application for drug development, research and treatment diagnosis (20 minutes)

**11:00–12:20, PLENARY SESSION, Plenary hall**

**Chairperson:** Julie Y. H. Chan, Taiwan

**Speaker 1:** Rhian M. Touyz, United Kingdom (40 minutes)

**Lecture title:** Plenary lecture: Molecular and vascular pathophysiology of hypertension

**Speaker 2:** Samuel H.H. Chan, Taiwan (40 minutes)

**Lecture title:** Understanding brain death: Insights from translational medicine

**13:30–15:30, SYMPOSIUM, Hall 1**

**GENETIC AND NUTRITIONAL FACTORS IN PATHOPHYSIOLOGY - REDOX SIGNALING**

**Chairperson 1:** Cesar G. Fraga, Argentina

**Chairperson 2:** Joao Laranjinha, Portugal

**Speaker 1:** Enrique Cadenas, USA (30 minutes)

**Lecture title:** Mitochondrion-centric approach to brain aging and Alzheimer's

**Speaker 2:** Patricia I. Oteiza, USA (30 minutes)

**Lecture title:** Zinc and redox signaling in brain development

**Speaker 3:** Joao Laranjinha, Portugal (30 minutes)

**Lecture title:** Nitric oxide-mediated mechanisms in Alzheimer's disease

**Speaker 4:** Giuseppe Valacci, USA (30 minutes)

**Lecture title:** Redox signaling in Rett syndrome

### 13:30–15:30, SYMPOSIUM, Hall 2

#### **PATHOPHYSIOLOGY OF INTRA- & INTERCELLULAR REGULATION I**

**Chairperson 1:** Anatolii Kubyshkin, Russian Federation

**Chairperson 2:** Sergey Orlov, Russian Federation

**Speaker 1:** Johanne Tremblay, Canada (30 minutes)

**Lecture title:** Role of COMMD5 in cancer as a regulator of endosomal trafficking and EGFR transport and activity.

**Speaker 2:** Valerian E. Kagan, USA (30 minutes)

**Lecture title:** Redox lipidomics of programmed cell death

**Speaker 3:** Anatolii Kubyshkin, Russian Federation (20 minutes)

**Lecture title:** Multipotent mesenchymal bone marrow-derived stem cells and apoptotic bodies of cardiomyocytes in process of myocardium reparative morphogenesis

**Speaker 4:** Irina Guzhova, Russian Federation (20 minutes)

**Lecture title:** Chaperones as molecular targets in oncological and neurodegenerative diseases

**Speaker 5:** Boris Margulis, Russian Federation (20 minutes)

**Lecture title:** Prion-like intercellularly transmitted pathologies

### 13:30–15:30, CLINICAL SYMPOSIUM, Hall 3

#### **NEW FRONTIERS AROUND PSYCHOPATHOLOGY**

**Chairperson 1:** Spiridione Masaraki, Italy

**Chairperson 2:** Yuko Urakami, Japan

**Speaker 1:** Andrea Crocetti, Italy (30 minutes)

**Lecture title:** Tinnitus composite discomfort

**Speaker 2:** Federico Colombo, Italy (30 minutes)

**Lecture title:** Gambling Disorder: Personality characteristics in a clinical sample

**Speaker 3:** Roberto Truzoli, Italy (30 minutes)

**Lecture title:** A comparison between group cognitive behavioural therapy with and without text messaging (SMS) to support compliance in depressed and anxious outpatients

**Speaker 4:** Caterina Viganò, Italy (15 minutes)

**Lecture title:** Psychogenetic dysphagia integrated approach for diagnosis and treatment

**Speaker 5:** Yuko Urakami Japan (15 minutes)

**Lecture title:** Music training is associated with magnetoencephalographic gamma- and alpha-band oscillation binding with attention and consciousness.

15:30–16:30, POSTER SESSIONS A1, A2, B1, B2

**SESSION A1: BRAIN AND BEHAVIOURAL DISORDERS I**

**Chairpersons A1:** Nataša Hlaváčková, Filip Tichánek

**SESSION A2: BRAIN AND BEHAVIOURAL DISORDERS II**

**Chairpersons A2:** Julia O. Fedotova, Fedor Jagla

**SESSION B1: RENAL AND GASTROINTESTINAL DISORDERS**

**Chairpersons B1:** Angelika Púzserová, Libor Kopkan

**SESSION B2: RESPIRATORY DISORDERS**

**Chairpersons B2:** Alina E. Pârvu, Jozef Török

16:30–18:30, SYMPOSIUM, Hall 1

**METABOLIC SYNDROME AND CARDIOVASCULAR RISK**

**Chairperson 1:** Satomi Kagota, Japan

**Chairperson 2:** Oľga Pecháňová, Slovakia

**Speaker 1:** Oľga Pecháňová, Slovakia (30 minutes)

**Lecture title:** Experimental metabolic syndrome: standard and alternative therapies

**Speaker 2:** Satomi Kagota, Japan (30 minutes)

**Lecture title:** Compensatory effects of perivascular adipose tissue on vasodilation differ by vascular site and age in rats with metabolic syndrome

**Speaker 3:** Péter Ferdinandy, Hungary (30 minutes)

**Lecture title:** Why do we still not have cardioprotective drugs on the market? Importance of risk factors and unbiased ways to identify drug targets

**Speaker 4:** Martina Cebová, Slovakia (15 minutes)

**Lecture title:** The effect of palmitate exposure in utero on systolic and vascular function in mice

**Speaker 5:** Ioana Mozos, Romania (15 minutes)

**Lecture title:** Predictors of early arterial aging in patients with high normal blood pressure and hypertension

16:30–18:30, SYMPOSIUM, Hall 2

**PATHOPHYSIOLOGY OF INTRA- & INTERCELLULAR REGULATION II**

**Chairperson 1:** Sergey Orlov, Russian Federation

**Chairperson 2:** Anatolii Kubyshkin, Russian Federation

**Speaker 1:** Sergey Orlov, Russian Federation (30 minutes)

**Lecture title:** Intracellular monovalent cations as regulator of gene expression: role of Ca<sup>2+</sup> i-mediated and -independent signalling

**Speaker 2:** Aleksandr Kazimirsky, Russian Federation (20 minutes)

**Lecture title:** Features of the immunopathogenesis of atopic diseases: from expression of surface markers of lymphocytes to immunopathogenesis

**Speaker 3:** Svetlana Gusakova, Russian Federation (20 minutes)

**Lecture title:** Contractile activity of a pulmonary artery at volume change of smooth muscles cells

**Speaker 4:** Irina Bryndina, Russian Federation (20 minutes)

**Lecture title:** Sphingolipid signaling in disused skeletal muscle

**Speaker 5:** Iryna Fomochkina, Russian Federation (15 minutes)

**Lecture title:** Intercellular interactions in the endometrial hyperplasia-related inflammation development

**Speaker 6:** Leonid Kapilevich, Russian Federation (15 minutes)

**Lecture title:** General trends of myokines production under physical exercises of a different types and intensity

**16:30–18:30, CLINICAL SYMPOSIUM, Hall 3**

**AUTISM SPECTRUM DISORDERS – TARGETING PATHOMECHANISMS**

**Chairperson 1:** Daniela Ostatníková, Slovakia

**Chairperson 2:** Katarína Babinská, Slovakia

**Speaker 1:** Silvia Hnilicová, Slovakia (30 minutes)

**Lecture title:** Autism etiology, screening and diagnosis

**Speaker 2:** Daniela Ostatníková, Slovakia (30 minutes)

**Lecture title:** The role of steroids in autism pathogenesis

**Speaker 3:** Katarína Babinská, Slovakia (30 minutes)

**Lecture title:** Inflammation in pathogenesis of autism

**Speaker 4:** Aleksandra Tomova, Slovakia (30 minutes)

**Lecture title:** The gut microbiota and autism

**Friday, September 7, 2018**

**8:30–10:30, SYMPOSIUM, Hall 1**

**PATHOPHYSIOLOGICAL MECHANISMS OF EXPERIMENTAL HYPERTENSION**

**Chairperson 1:** Ivana Vaněčková, Czech Republic

**Chairperson 2:** Iveta Bernátová, Slovakia

**Speaker 1:** Ivana Vaněčková, Czech Republic (30 minutes)

**Lecture title:** Chronic kidney disease in Ren-2 transgenic rats and its treatment with endothelin receptor antagonists

**Speaker 2:** Elzbieta Kompanowska Jezierska, Poland (30 minutes)

**Lecture title:** Effects of chronic blockade of chymostatin-sensitive enzymes in experimental hypertension

**Speaker 3:** Libor Kopkan, Czech Republic (30 minutes)

**Lecture title:** Pathophysiology of congestive heart failure in experimental hypertensive models

**Speaker 4:** Angelika Púzserová, Slovakia (30 minutes)

**Lecture title:** Endothelial aging in spontaneously hypertensive rats

**8:30–10:30, ORAL SESSION, Hall 2**

**NEUROPSYCHIATRIC DISORDERS**

**Chairperson 1:** Daniela Ježová, Slovakia

**Chairperson 2:** Artem Grigoryan, Armenia

**Speaker 1:** Artem Grigoryan et al., Armenia (15 minutes)

**Presentation title:** The behavioral characteristics of hypokinetic syndrome in rats

**Speaker 2:** Tomáš Hromádka et al., Slovakia (15 minutes)

**Presentation title:** Systems approaches in neurodegeneration: Linking molecular pathology with cognitive deficits in Alzheimer's disease

**Speaker 3:** Filip Tichánek et al., Czech Republic (15 minutes)

**Presentation title:** Pathological phenotype of mouse model of rapid-onset spinocerebellar ataxia type 1

**Speaker 4:** Eszter Bögi et al., Slovakia (15 minutes)

**Presentation title:** How can maternal stress and/or antidepressants affect behavior of rat offspring?

**Speaker 5:** Nataša Hlaváčová et al., Slovakia (15 minutes)

**Presentation title:** Patients with atopy exhibited attenuated neuroendocrine response during psychosocial stress

**Speaker 6:** Leonid P. Churilov et al., Russian Federation (15 minutes)

**Presentation title:** On the Pathogenesis of Psychic Disorders in Hashimoto's Thyroiditis

**Speaker 7:** Julia O. Fedotova et al., Russian Federation (15 minutes)

**Presentation title:** Effects of vitamin D3 treatment on anxiety-like behavior of the middle-aged female rats after long-term ovariectomy (15 minutes)

**Speaker 8:** Andrea Mestanikova et al., Slovakia (15 minutes)

**Presentation title:** Pupillometry in adolescent depression

**11:00–12:20, PLENARY SESSION, Plenary hall**

**Chairperson:** Valerian E. Kagan, USA

**Speaker 1:** Boris V. Krylov Russian Federation (40 minutes)

**Lecture title:** Pathological pain: can it be safely cured?

**Speaker 2:** Ming Xu, China (40 minutes)

**Lecture title:** G-quadruplex and heart function

**13:30–15:30, SYMPOSIUM, Hall 1**

**VASCULAR DAMAGE, NOVEL MECHANISMS AND THERAPEUTIC OPPORTUNITIES**

**Chairperson 1:** Concepción Peiró, Spain

**Chairperson 2:** Silvia Arribas, Spain

**Speaker 1:** Concepción Peiró, Spain (30 minutes)

**Lecture title:** Diabetes, adipokines and vascular damage: which role for interleukin-1 $\beta$ ?

**Speaker 2:** Silvia Arribas, Spain (30 minutes)

**Lecture title:** Vascular remodelling: therapeutic targets and opportunity windows.

**Speaker 3:** Maria Bloksgaard, Denmark (30 minutes)

**Lecture title:** Determinants of vascular smooth muscle contractility in resistance arteries from patients with residual cardiovascular disease

**Speaker 4:** Yoshihiro Ishikawa, Japan (15 minutes)

**Lecture title:** Vascular graft made from cultured cells

**Speaker 5:** Silvia Lišková, Slovakia (15 minutes)

**Lecture title:** Comparison of Ca<sup>2+</sup>-dependent Cl<sup>-</sup> channels blockade and endothelium-derived constricting factor in norepinephrine-induced contraction of rat femoral artery

### 13:30–15:30, ORAL PRESENTATIONS, Hall 2

#### FOOD SUPPLEMENTS IN DISEASE PREVENTION AND TREATMENT

**Chairperson 1:** Patricia I. Oteiza, USA

**Chairperson 2:** Vittorio Calabrese, Italy

**Speaker 1:** Iveta Bernátová et al., Slovakia (20 minutes)

**Presentation title:** Involvement of calcium channels in (-)-epicatechin-induced vasorelaxation

**Speaker 2:** Gabriele Di Rosa et al., Italy, Germany (20 minutes)

**Presentation title:** Olive oil polyphenols show beneficial effects in two *C. elegans* Parkinson models

**Speaker 3:** Alina E. Pârvu et al., Romania (15 minutes)

**Presentation title:** Polyphenolic compounds, antioxidant and cardioprotective effects of pomace extracts from Feteasca Neagra and Pinot cultivars

**Speaker 4:** Monika Barteková et al., Slovakia (15 minutes)

**Presentation title:** Cardioprotective effects of quercetin against ischemia-reperfusion injury in isolated juvenile and adult rat hearts

**Speaker 5:** Lyudmila U. Belyaeva et al., Belarus (15 minutes)

**Presentation title:** Resveratrol attenuates NO-dependent coronary vessels tone dysregulation and modifies sirtuin-1 expression in the myocardium of prenatally stressed rats

**Speaker 6:** Jovana Jeremič et al., Serbia (15 minutes)

**Presentation title:** Cardioprotective effects of diallyl trisulfide in a rat model of type-1 diabetes mellitus

**Speaker 7:** Tamara Nikolič Turnič, Serbia (15 minutes)

**Lecture title:** Plasma phospholipid fatty acid profile in rats with different degree of diet-induced

### 15:30–16:30, POSTER SESSIONS C1, C2, C3, D

#### SESSION C1: ATHEROSCLEROSIS AND VASCULAR DISORDERS

**Chairpersons C1:** Silvia M. Arribas, Andrea Berényiová

#### SESSION C2: HIGH BLOOD PRESSURE

**Chairpersons C2:** Elżbieta Kompanowska Jezierska, Soňa Čáčányiová

### **SESSION C3: HEART DISEASES**

**Chairpersons C3:** Irina Guzhova, Monika Barteková

### **SESSION D: TEACHING IN PATHOPHYSIOLOGY**

**Chairpersons D:** Silvia Hnilicová, Peter F. Litvitskiy

## **Saturday, September 8, 2018**

**8:30–10:30, SYMPOSIUM, Hall 1**

### **CHRONODISRUPTION AND LIFE STYLE DISEASE**

**Chairperson 1:** Bert van der Horst, The Netherlands

**Chairperson 2:** Michal Zeman, Slovakia

**Speaker 1:** Michal Zeman, Slovakia (30 minutes)

**Lecture title:** Artificial light at night as a risk factor for health

**Speaker 2:** Bert van der Horst, The Netherlands (30 minutes)

**Lecture title:** Impact of circadian disturbance on later life health

**Speaker 3:** Alena Sumová, Czech Republic (30 minutes)

**Lecture title:** Regulation of colonic circadian clock and impact of its disruption

**Speaker 4:** Monika Okuliarová, Slovakia (15 minutes)

**Lecture title:** Effects of light at night on immune cell distribution and their daily rhythms in the circulation and tissues

**Speaker 5:** Kristína Hasáková et al., Slovakia (15 minutes)

**Lecture title:** Expression of clock gene in colorectal cancer patients is dependent on tumor location

**8:30–10:30, ORAL SESSION, Hall 2**

### **GASSOTRANSMITTERS, NEUROTRANSMITTERS AND PEPTIDES IN DISEASED STATES**

**Chairperson 1:** Josef Zicha, Czech Republic

**Chairperson 2:** Vladimir Lj. Jakovlevic, Serbia

**Speaker 1:** Josef Zicha et al., Czech Republic (20 minutes)

**Presentation title:** Is Angiotensin II-Dependent Hypertension in Ren-2 Transgenic Rats Driven by Central Sympathoexcitation?

**Speaker 2:** Vladimir Lj. Jakovlevic et al., Serbia (20 minutes)

**Presentation title:** The effects of potassium cyanide on functional recovery of isolated rat heart after ischemia and reperfusion: role of oxidative stress

**Speaker 3:** Jozef Török and Anna Zemančíková (15 minutes)

**Presentation title:** Attenuation of anticontractile effect of perivascular adipose tissue might contribute to the development of hypertension

**Speaker 4:** Soňa Čačányiová et al., Slovakia (15 minutes)

**Presentation title:** The interaction of hydrogen sulfide with NO-synthase and NO donors triggers specific vasoactive effects in isolated arteries of rats and patients with arterial hypertension



**Speaker 5:** Sergio Modafferi et al., Italy (15 minutes)

**Presentation title:** Hydrogen sulfide and its interaction with carnosine metabolism

**Speaker 6:** Hongzhu Li et al., China, Canada (15 minutes)

**Presentation title:** Exogenous H<sub>2</sub>S contributes to recovery of ischemic post-conditioning-induced cardioprotection via increase of autophagy in the aged hearts

**Speaker 7:** Andrea Berényiová, Slovakia (15 minutes)

**Presentation title:** Age and increased blood pressure modulated the nitric oxide and hydrogen sulphide signalisations in spontaneously hypertensive rats

### 8:30–10:30, ORAL PRESENTATIONS, Hall 3

#### TEACHING IN PATHOPHYSIOLOGY

**Chairperson 1:** Angelika Púzserová, Slovakia

**Chairperson 2:** Georgi M. Sarov, Bulgaria

**Speaker 1:** Zdenko Kovač, Croatia (30 minutes)

**Presentation title:** Integrative education and cognitive tools for tomorrow medicine: Pathophysiological reactivity outlined via algorithmic networks and etiopathogenetic clusters fits the criteria of graph theory

**Speaker 2:** Georgi M. Sarov et al., Bulgaria (20 minutes)

**Presentation title:** The role of pathophysiology in building medical knowledge

**Speaker 3:** Silvia Hnilicová et al., Slovakia (20 minutes)

**Presentation title:** Simulation-Based Learning in Human Physiology and Pathophysiology at Comenius University

**Speaker 4:** Artem Grigoryan et al., Armenia (20 minutes)

**Presentation title:** "Becoming a cancer" board game as a form of a practical class in pathophysiology

**Speaker 5:** Peter F. Litvitskiy, Russian Federation (20 minutes)

**Presentation title:** Systemic multilevel teaching of pathophysiology in a medical school

### 10:30–11:30, POSTER SESSIONS E1, E2, E3

#### SESSION E1: INFLAMMATION

**Chairpersons E1:** Tatiana Ravingerová, Iryna Fomochkina

#### SESSION E2: CANCER

**Chairpersons E2:** Johanne Tremblay, Ima Dovinová

#### SESSION E3: METABOLIC DISORDERS

**Chairpersons E3:** Vladimír Živkovič, Martina Cebová