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**I.P. Pavlov Institute of Physiology
Russian Academy of Sciences (RAS)
International Union of Physiological Sciences (IUPS)
Department of Physiological Sciences RAS**

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Supported by the Ministry of Science and Higher Education of the Russian Federation (agreement No. 075-15-2020-921 for the creation and development of the World-Class Scientific Center (WCSC) Pavlov Center "Integrative Physiology - to Medicine, High-tech Healthcare and Technologies of Stress Resistance").

On behalf of the Organizing Committee of IUPS-BRICS symposium "Stress in health and disease" we welcome you to Pavlov Institute Physiology, unfortunately this time on-line. The first IUPS-BRICS meeting on Stress was held in Pavlov Institute of Physiology RAS in 2019.

The symposium is dedicated to the memory of Prof. Anatoly A. Filaretov, who in 2022 would have turned 85 years old. A.A. Filaretov is an eminent scientist in the field of neuroendocrinology, the author of numerous articles and 4 monographs devoted to the mechanisms of regulation and patterns of functioning of the key hormonal axis of stress – the hypothalamic-pituitary-adrenocortical system.

Historical perspective & Venue: Pavlov Institute of Physiology of the Russian Academy of Sciences was founded in 1925. The first Director of the Institute of Physiology until 1936 was the first Nobel Prize winner in theoretical medicine Academician Ivan P. Pavlov. Pavlov is considered as a founder of integrative physiology. In 2025 Pavlov Institute of Physiology will celebrate the 100th anniversary.

Future prospects: We are pleased to inform you that our project on creation of the World-Class Scientific Center (WCSC), which we discussed in 2019, was supported by the Ministry of Science and High Education of the Russian Federation at August 28, 2020. WCSCs were created in the format of consortia within the framework of the Russian national project "Science" to perform breakthrough research on the priorities of scientific and technological development. We are very grateful to the former President of IUPS Prof. Julie Chan for her great support.

WCSC Pavlov Center "Integrative Physiology - to Medicine, High-tech Healthcare and Technologies of Stress Resistance" was established on the basis of Pavlov Institute of Physiology Russian Academy of Sciences with the participation of several other scientific organizations we invited.

The Theme of this symposium is Stress. The topic is critically important for development of integrative physiology. The Father of Stress concept Hans Selye foretold: "Stress in health and disease is medically, sociologically, and philosophically the most meaningful subject for humanity".

In the frame of the Pavlov Center project we organize this symposium to exchange by new knowledge on stress and discuss possible cooperation.

Ludmila Filaretova

Chair of the Organizing Committee

Sci. Head of the WCRC Pavlov Center "Integrative Physiology to Medicine, High-tech Healthcare and Technologies of Stress Resistance"

December 15, 2022
Pavlov Institute of Physiology
Russian Academy of Sciences
On-line

Morning Session (10:00 – 14:00 Moscow time)
*(25 min talk including 5 min discussion
or 15 min talk*)*

Greeting from the Symposium Chair

Sandor Szabo (*School of Medicine & Pharmacy, American University of Health Sciences, Signal Hill/Long Beach, CA, USA*)
From the first animal experiments of Hans Selye to the post-COVID stress disorder

Pantelina Zourna-Hargaden and Sandor Szabo (*School of Medicine & Pharmacy, American University of Health Sciences, Signal Hill/Long Beach, CA, USA*)
Stress and other endocrine changes in COVID-19

Vadim Gushin, Dmitry Shved, Ivan Rozanov (*Russian Federation State Scientific Center - Institute of Biomedical problems of the Russian Academy of Sciences, Moscow, Russia*)
Psychological support in extended space flights

Yun Wang (*Peking University, China*)
Activity-dependent phosphorylation of epigenetic factor CDYL by cyclin dependent kinase 5 regulates fear memory in mice

Daniela Jezova (*Institute of Experimental Endocrinology, Biomedical Research Center, Slovak Academy of Sciences, Bratislava, Slovakia*)
A role of the stress hormone aldosterone in the pathophysiology of major depressive disorder

Dora Zelena (*Institute of Physiology, Medical School, University of Pécs, Centre for Neuroscience, Szentágothai Research Centre, Pécs, Hungary*)
Vasopressin as a social hormone, implication to autism

Kikuko Amagase*, Shizuka Jonan (*Laboratory of Pharmacology & Pharmacotherapeutics, Graduate School of Pharmaceutical Sciences, Ritsumeikan University, Shiga, Japan*)
Glutamate alliviate the intestinal damage caused by chemotherapeutic agents

Ludmila Filaretova* (*Pavlov Institute of Physiology, Russian Academy of Sciences, St. Petersburg, Russia*)
Anatoly Filaretov's contribution to the study of the HPA axis

Break

Afternoon Session (15:00-18:00 Moscow time)
(25 min talk including 5 min discussion)

Vagner Antunes (*Institute of Biomedical Sciences University of Sal Paulo, Brazil*)
Purinergic signaling at the hypothalamus level orchestrating the neural control of circulation during osmotic stress

Natalia Yarushkina (*Pavlov Institute of Physiology, St. Petersburg, Russia*)
Stress modulation of somatic pain sensitivity

Elena Rybnikova, Oleg Vetrovoy, Ksenia Baranova (*Pavlov Institute of Physiology, St. Petersburg, Russia*)
The dual role of hypoxia-inducible factor HIF-1 in the processes of adaptation of brain neurons

Bruno Bonaz (*Grenoble, France*)
Stress & functional GI disorders: Motility disorders, IBS (irritable bowel syndrome)

Adriane Bello-Klein (*Federal University of Rio Grande do Sul, Porto Alegre, Brazil*)
Oxidative and mitochondrial adaptations in right heart failure: role of extracellular vesicles

Discussion