

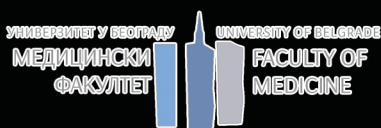


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Programme:

31 May

Belgrade Youth Center-Hall

12:00-16:00 Registration

Belgrade Youth Center-Amerikana

12:00-13:00 FRM2019 Highlights

13:00-14:00 BAW Highlights

14:00-15:00 ZooBrainology

15:00-16:00 Euro-Neuro – edutainment, 2012

University of Belgrade

Rectorate building - the Mansion of Miša Anastasijević

17:00-17:40 Opening Ceremony

17:40-18:30 Opening Lecture (Chairs: Selma Kanazir & Ivanka Marković)

Professor Carmen Sandi

Laboratory of Behavioral Genetics, Brain Mind Institute, Swiss Federal
Institute of Technology in Lausanne, Lausanne, Switzerland

**Neural circuits and metabolic pathways on the links between stress,
anxiety & motivation**

18:30-20:00 Cocktail Party

01 June

Belgrade Youth Center - Amerikana & Hall

- 9:00-9:45** **Keynote Lecture** (Chairs: Elka Stefanova & Ivanka Marković)
Professor Frank Jessen
Department of Psychiatry, University of Cologne, Medical Faculty, Cologne, Germany
First symptomatic manifestation of Alzheimer's disease
- 09:45-10:00** **Coffee Break**
- 10:00-10:35** **Single-cell and SPATIAL transcriptomics in Neuroscience**, lecture by 10X Genomics, sponsored by Labena
- 10:35-12:45** **Morning Session** (Chairs: Dragomir Milovanović & Saša Filipović)
Brain Stimulation, Phase Separation and Open Data
- 10:40-11:05** **Andrej Savić, PhD**
Science and Research Centre, School of Electrical Engineering, University of Belgrade, Belgrade, Serbia
Brain-computer interface for electrotactile sensory training after stroke
- 11:05-11:30** **Jovana Bjekić, PhD**
Group for Neuroscience, Institute for Medical Research, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia
Using noninvasive brain stimulation to modulate memory in humans: from mechanisms to clinical applications
- 11:30-11:55** **Milorad Dragić, PhD**
Laboratory for Neurobiology, Department of General Physiology and Biophysics, Faculty of Biology, University of Belgrade, Belgrade, Serbia
Transcranial magnetic stimulation as a therapeutic approach for neurodegenerative disorders - insights from animal models
- 11:55-12:20** **Dragomir Milovanović, PhD**
Laboratory for Molecular Neuroscience, German Center for Neurodegenerative Diseases, Charité University Clinic in Berlin, Berlin, Germany
Phase separation in neuronal physiology and pathology
- 12:20-12:45** **Ivan Zaletel, MD, PhD**
Institute of Histology and Embryology "Aleksandar Đ. Kostić", Faculty of Medicine, University of Belgrade, Belgrade, Serbia
Open-access data and resources in neuroscience research

12:45-15:00 **Lunch Break and Poster Session** (13:30-14:30 Selected Abstracts will be presented in Amerikana)

15:00-17:10 **Afternoon Session** (Chairs: Nina Vardjan & Aleksandra Mladenović)

Brain Metabolism & Dietary Interventions

15:05-15:30 **Nina Vardjan, PhD**

Laboratory of Neuroendocrinology, Molecular Cell Physiology, Institute of Pathophysiology, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia

Adrenergic regulation of astrocyte glucose and lipid droplet metabolism

15:30-15:55 **Predrag Vujović, PhD**

Department for Comparative Physiology and Ecophysiology, Institute for Physiology and Biochemistry “Ivan Djaja”, Faculty of Biology, University of Belgrade, Belgrade, Serbia

Expression Regulation and Roles of Insulin Produced in the Brain

15:55-16:20 **Ana Podolski-Renić, PhD**

Department of Neurobiology, Institute for Biological Research “Siniša Stanković”, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia

The role of the Thioredoxin detoxification system in glioblastoma progression and drug resistance

16:20-16:45 **Nataša Lončarević, PhD**

Molecular Nutrition and Health Lab, Centro de Estudos de Doenças Crónicas, NOVA Medical School, Universidade Nova de Lisboa, Lisbon, Portugal

Can consumption of (poly) phenol-rich food ameliorate molecular and behavioral PD-like pathology in MPTP-treated mice?

16:45-17:10 **Smilja Todorović, PhD**

Department of Neurobiology, Institute for Biological Research “Siniša Stanković”, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia

Dietary restriction as an anti-aging intervention

17:10-17:30 **Coffee Break**

17:30-18:15 **Keynote Lecture** (Chairs: Selma Kanazir & Jelena Đorđević)

Cláudia Nunes Dos Santos, PhD

Molecular Nutrition and Health Lab, Centro de Estudos de Doenças Crónicas, NOVA Medical School, Universidade Nova de Lisboa, Lisbon, Portugal

Brain permeability and neuroprotection by the gut (poly)phenol metabolites

02 June

Belgrade Youth Center - Amerikana & Hall

09:00-09:45 **Keynote Lecture** (Chairs: Vladimir Trajković & Danijela Savić)

Marina Jendrach, PhD

Department of Neuropathology, Charité, Universitätsmedizin Berlin, corporate member of Freie Universität Berlin, Humboldt-Universität Zu Berlin, Berlin Institute of Health, Germany

Modulation of neuroinflammation by autophagy

09:45-10:00 **Coffee Break**

10:00-12:10 **Morning Session** (Chairs: Pavle Anđus & Marin Jukić)

Brain Disorders – From Genetics to Markers

10:05-10:30 **Marija Švirtlih, PhD**

Laboratory for Human Molecular Genetics, Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Serbia

SOX Transcription Factors – choosing between stemness and neuronal differentiation

10:30-10:55 **Milena Janković, MD, PhD**

Laboratory for Molecular Genetic Diagnostic of Neurological Diseases, Neurology Clinic, University Clinic Center of Serbia, University of Belgrade, Belgrade, Serbia

Genetics of neurodegeneration: from global resemblance to regional differences

10:55-11:20 **Milena Milošević, PhD**

Center for Laser Microscopy, Institute for Physiology and Biochemistry "Jean Giaja", Faculty of Biology, University of Belgrade, Belgrade, Serbia

ALS IgG - translation to a physiological diagnostic marker

11:20-11:45 **Verica Paunović, PhD**

Institute of Microbiology and Immunology, Faculty of Medicine, University of Belgrade, Belgrade, Serbia

Downregulation of LKB1/AMPK Signaling in blood mononuclear cells is associated with the severity of Guillain-Barre syndrome

11:45-12:10 **Marin Jukić, PhD**

Department of Physiology, Faculty of Pharmacy, University of Belgrade, Belgrade, Serbia

The humanized CYP2C19 transgenic mouse exhibits cerebellar atrophy and movement impairment reminiscent of ataxia

Effect of enriched environment on serotonin and RNA editing of serotonin 2C receptor is specific for brain regions and mouse strains

Jelena Karanović¹, Tomaž Bratkovič², Vera Stamenković³, Nebojša Jasnić³, Milena Milošević³, Ana Đorđević⁴, Pavle Anđus³, Vladimir M. Jovanović⁵, Dušanka Savić-Pavićević¹

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⁵Bioinformatics Solution Center, Institut für Informatik, Freie Universität Berlin, Berlin, Germany

Serotonin neurotransmission is sensitive to environmental stimuli. Serotonin receptor 2C (HTR2C) undergoes dynamic A-to-I editing that fine-tunes cell response to serotonin and is altered in depressed suicide victims and by pharmacological treatments. We aimed to explore a mediating role of *Htr2c* mRNA editing in response to enriched environment and factors involved in this response. Three-week-old BALB/c and C57BL/6 male mice were housed in enriched and standard conditions for four weeks. *Htr2c* mRNA editing pattern and expression, serotonin level and expression of *Adar* and *Adarb1* mRNAs (coding enzymes catalyzing A-to-I editing) and *Snord115* RNA (regulating *Htr2c* mRNA alternative splicing and editing) were measured in prefrontal cortex (PFC) and hippocampus (HC), brain regions implicated in suicidal behavior. BALB/c mice, a "stress-sensitive" strain due to genetically determined lower serotonin level, responded to enriched conditions by adapting the *Htr2c* editing pattern to a slight serotonin decrease in PFC and a significant increase in HC. C57BL/6 mice, a "stress-resilient" strain, responded to enriched environment by increasing the serotonin level and changing *Adar* and *Adarb1* mRNAs expression in HC, and without changes in PFC. Our findings suggest that the enriched environment effect on the serotonin level and a mediating role of *Htr2c* mRNA editing in PFC depend on the genetic background and its interactions with the environment. On the other hand, changes in HC are primarily driven by enriched environment.

Our results imply usefulness of enriched environment paradigm for understanding interactions of genetic and environmental factors underlying suicidal behavior, which might improve psychological treatments.

Acknowledgement: This study was supported by the Ministry of Education, Science and Technological Development, Republic of Serbia and Slovenian Research Agency (Agreement no. 451-03-39/2016-09/15/01).