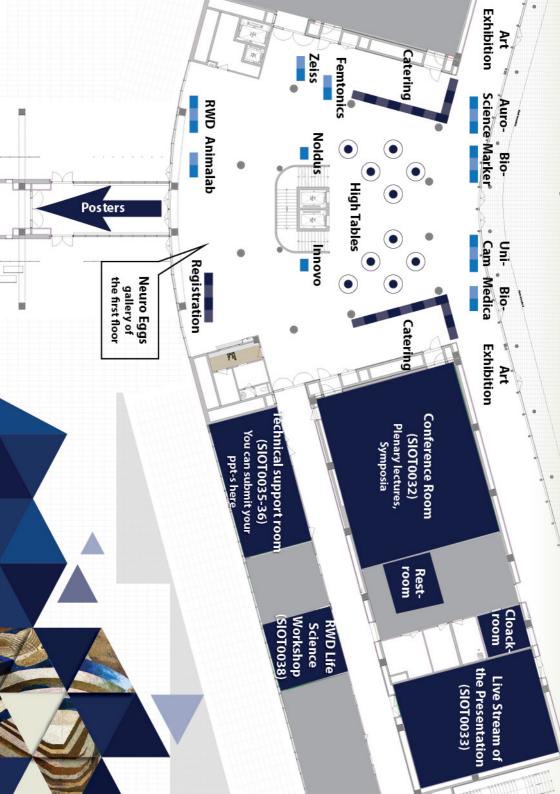


Pécs 25-26 January, 2024

# International Neuroscience Conference, Pécs 2024





### Dear Colleagues,

We warmly welcome all participants and supporters at the **International Neuroscience Conference 2024** organized by the University of Pécs. The Endre Grastyán theoretical building of the Medical School of the University of Pécs opened in 2021 provides an excellent stage for our meeting. With more than 400 participants from all over the world we expect a lively exchange of research and collaboration ideas, which also serve to train the younger generation. We feel honoured that renowned international scientists will present their latest results in the forms of 4 plenary lectures, 6 symposia, and more than 240 Posters, further emphasizing the importance of Hungarian neuroscience within the international community. We hope that the social events will also help to share ideas and promote networking.

We are looking forward to a fruitful and enjoyable meeting!

Zsuzsanna Helyes and Dóra Zelena
Co-Chairs of the Conference



	25 <sup>th</sup> January, Thursday		26 <sup>th</sup> January, Friday
08:30-18:30	Registration, Information	08:30-17:45	Registration, Information
08:30-09:30	Welcome coffee		
09:30-09:40	Opening remarks	08:50-09:00	Opening of the second day
09:40-10:00	Plenary lecture - László Lénárd	09:00-09:45	Plenary lecture III  - Jes Olesen
10:00-12:00	Symposium I		(Buzsáki Lecture)
	János Boros - György Buzsáki	09:45-11:15	Symposium IV Viktor Szegedi - Gábor Molnár
12:00-14:00	Lunch break	11:15-11:45	Coffee break
	Poster section I	11:45-13:10	Symposium V Béla Völgyi - Ildikó Telkes - Tamás Kovács-Öller
14:00-15:45	Symposium II Kristóf László - Attila Tóth	13:15-15:15	Lunch break Poster section II
15:45-16:15	Coffee break		
16:15-17:45	Symposium III Zsuzsanna Tóth	15:30-17:00	Symposium VI Zsolt Bagosi - Krisztina Csabafi
17:45-18:30	Plenary lecture II - Zoltán Molnár	17:00-17:45	Plenary lecture IV - Ewelina Knapska
		17:45-18:00	Poster awards,
19:30-23:00	Conference dinner		concluding remarks

The lists of all the posters and the participants are available in the

Abstract book



## RUD|瑞沃德

### Utility of Fiber Photometry and In Vivo **Imaging in Microcirculation for Neuroscience**



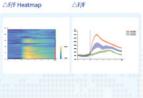
- Neurons activity detection in vivo- Fiber Photometry System
- Mice Cognitive Assessment System-Olfactometer
- Automated Stereotaxic Instruments with Auto Injection Function



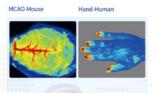




→ Registration

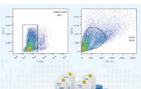








**RFLSI ZW Laser Speckle Imaging System** 



Mouse Tumor--Breast Cancer



Single Cell Suspension Dissociator



**Automated Stereotaxic** Instrument



**RWD Olfactometer** 



Compact Small Animal **Anesthesia Machine** 













### **CHIEF PATRON**

**Miklós Nyitrai,** Dean of the Medical School, University of Pécs, Pécs, Hungary

### **ORGANIZING COMMITTEE**

### PRESIDENTS:

**Zsuzsanna Helyes,** Department of Pharmacology and Pharmacotherapy, Medical School, University of Pécs, Pécs, Hungary **Dóra Zelena,** Institute of Physiology, Medical School, University of Pécs, Pécs, Hungary

### MEMBERS:

**Valéria Tékus, Éva Borbély, Zsófia Hajna** and **Rita Börzsei** from the *Department of Pharmacology and Pharmacotherapy, Medical School, University of Pécs, Pécs, Hungary* 

**Péter Buzás** and **Kristóf László** from the *Institute of Physiology, Medical School, Universty of Pécs, Pécs, Hungary* 

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**Hajnalka Ábrahám,** Department of Medical Biology amd Central Electron Miscroscopic Laboratory, Medical School, University of Pécs, Pécs, Hungary

**Boldizsár Czéh,** Department of Laboratory Medicine, Medical School, University of Pécs, Pécs,

**Dóra Reglődi,** Department of Anatomy, Medical School, University of Pécs, Pécs, Hungary

# Meet Mica at INC 2024 The world's first Microhub







We'd like to thank the following companies for their support:







We'd like to thank the Biomedicines and Neurology International journals by MDPI for sponsoring the awards for the poster presentation awards!





The co-organizers of the 'Functional investigations in human brain sample' symposium:



### **Exhibitors:**





















### **CONFERENCE**

Conference date: 25-26th January, 2024
Conference venue: University of Pécs,

**Grastyán Endre Theoretical Block (new building)** 

Address: HU7624 Pécs, Szigeti road 12.

Conference language: The official language of the congress is English.

### **REGISTRATION DESK**

**Thursday** between 8.30 am – 6.30 pm **Friday** between 8.30 am – 5.45 pm

### **CLOAKROOM**

### Opening hours:

Grastyán Endre Theoretical Block (new building)

**25**<sup>th</sup> **January (Thursday)** 8.00 am – 6.30 pm **26**<sup>th</sup> **January (Friday)** 8:00 am – 7:00 pm

Romhányi György Theoretical Block (old building)

**25<sup>th</sup> January (Thursday)** 6.30 am – 12.00 am

### **PARKING**

The area around the university is a paid parking zone.



### WIFI

Network: **INC2024** Password: **Mitt2024** 

### **ORAL PRESENTATIONS**

For lectures, we use an MS Windows-based computer projector with MS Power Point Office application. Please hand over the material of the presentation in PPT or compatible format, if possible, on a USB stick, to the technical staff in the technical support room (SIOT0035/36) at least half an hour before your session starts.

Due to the large number of participants, the presentations will also be broadcast in a smaller lecture hall (SIOT0033). For this reason, we would like to ask you to stay behind the podium during your presentation, because the camera will be recording that spot.

Lecturers and the symposium organizers should keep the time limits strictly.

### **POSTER PRESENTATIONS**

Posters will be presented on 25-26<sup>th</sup> January, Thursday and Friday, in University of Pécs, Romhányi György Hall (Aula)

We ask the poster presenters not to leave their poster during the own presentation period if possible.

### **IMPORTANT DATES:**

### Poster session I. • 25th January (Thursday), 1 pm – 2 pm

Installation date: 25<sup>th</sup> January (Thursday), 8.00 am – 11.30 am Collection date: 25<sup>th</sup> January (Thursday), 2.00 pm – 2.30 pm

Poster session II. • 26th January (Friday), 2.15 pm – 3.15 pm

Installation date: 26<sup>th</sup> January (Friday), 8.30 am – 12.30 pm Collection date: 26<sup>th</sup> January (Friday), 3.30 am – 5 pm

Our colleagues will provide tools for the installation on-site.

### **COFFEE BREAK AND LUNCH**

The coffee and lunch breaks will be served in the Grastyán Endre Theoretical Block Hall.

A badge is always required to use the service.

The registration fee includes: participation in the scientific program, and the coffee and lunch breaks for 1 person.

### **GALA DINNER**

Venue: University of Pécs, Romhányi György Hall (Aula)

Address: HU7624 Pécs, Szigeti road 12.
Date: **25**<sup>th</sup> **January (Thursday)** 

Dinner tickets can be found in the registration package. *Please don't forget to bring your gala dinner ticket with you!* 

Arrival time: 7.15 pm - 7.30 pm

Concert: 7.30 pm – 8.15 pm – Mihály Boros (piano)

Dinner & Dance until 11:00 pm

In order to avoid delaying the concert, please make sure to arrive and take your seats on time!

### **Concert by Mihály Boros pianist**

Mihály Boros, who will be performing at the gala dinner of the conference, is a Junior Prima award-winning pianist, who won the televised classical music talent search called Virtuosos, presented himself at the Lincoln Center's Avery Fisher Hall in New York, and appeared in front of the Swiss audience in Zurich as a special prize winner of the Armel Opera Festival with the Pannon Philharmonic Orchestra.

By the time he was 18, he had entered twelve piano competitions, winning first place in all of them.

He gave concerts in London, Milan, Paris, Stockholm, Gothenburg, Brussels, Tokyo, Osaka, Beijing, Shanghai, São Paulo, among others.

Your intention to participate had to be indicated during registration before the date of the conference. It is no longer possible to register for the dinner on-site.



### **ART EXHIBITIONS**

Venue: University of Pécs, Grastyán Endre Theoretical Block

### **Flashes**

**Zsuzsanna Katatics** Art teacher, Fine Arts Therapist, Dombóvár, Hungary

The basic concept of the exhibition is the artistic representation of parts of the human body. The works exhibited represent visual images from a unique perspective, an abstract idea based on structures of the human body. Hidden in the paintings one can discover anatomical structures, organs or their simplified parts. As technical approach, mainly graphical art, the viewer can enjoy the dynamics of the visual elements, their complexity and the harmony of colors.



# Pain narrative and artistic representation

**Prof. Márta Nyilas** Faculty of Music and Visual Art, University of Pécs, Pécs, Hungary

**Kamilla Boda** Department of Behavioural Sciences, Medical School, University of Pécs, Pécs, Hungary **Dr. Árpád Csathó** Department

of Behavioural Sciences, Medical School, University of Pécs, Pécs, Hungary

In the course entitled Pain Narratives and Art Representation, students from the Fa-



culty of Music and Visual Art created artworks based on structured interviews with patients living with chronic pain. The interview questions covered affective,

cultural, and physical aspects of pain. The students created artworks with a free interpretation that, in addition to their artistic value, could also function as a non-verbal means of communication between doctors and patients in a photo-documented form.



NEURO EGGS – artworks from a unique course on manual skill development (gallery of the first floor) József L. Szentpéteri, ITD – Institute of Transdisciplinary Discoveries, Medical School, University of Pécs, Pécs, Hungary

Traditional Easter egg dying is a way more complex activity than then it seems at first glance. Such recognition initiated to create a university course, which helps polishing manual skills for medical students through a dramatically alternate way they got used to. The aim of the course is to develop and polish manual skills through alternative ways, which causes not just pleasure but creates artwork. Besides manual skills, this course helps to develop patience, focus, precision, and tolerance of monotony. Within the frames of the course, students can polish their manual skills by absorbing several aspects of traditional Easter egg-dying methods. Activities include engraving and carving with a professional engraver; syringe and medical needle use; wax melting; precision wax applying to the uneven surface; precision painting; acidic etching. On top of it, created artworks can be exhibited as well, which motivates many other students.

### **WORKSHOP**

Utility of Fiber Photometry and In Vivo Imaging in Microcirculation for Neuroscience

A workshop will be held in room SIOT0038 (see map) on 25 January (Thursday) between 1-2 pm.

For more information about the workshop, please click here.

### MEETING POLICY ON PHOTOGRAPHY, FILMING AND RECORDING

No photographs, video recording or audio recordings may be permitted in the scientific sessions at this conference unless otherwise authorized in advance by the Scientific Programme Committee. By entering this event you agree to being photographed which may be used for marketing or promotional purposes. The Society encourages the use of social media before, during, and after the annual meeting, so long as it falls within embargo and communications rules. If you do so, please use #INC2024.

### LIABILITY AND OTHER INSURANCE

The published participation fee does not include accident, illness, baggage, and liability insurance fees. Thus, in the event of an accident, illness or damage, the organizers are not in a position to assume any responsibility or compensation.

### **ORGANIZING AGENCY**



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### Erika Kulcsár

E-mail: erika.kulcsar@nexusconference.hu • Phone: +36 30 091 5949



REGISTRATION, INFORMATION

**OPENING REMARKS** 

### Thursday, 25 January 2024

09:40 - 10:00	PLENARY LECTURE: THE HUNGARIAN NEUROSCIENCE SOCIETY 30 YEARS AGO László Lénárd Emeritus professor, Institute of Physiology, Pécs University Medical School, Pécs, Hungary
10:00 - 12:00	Symposium I. Neuroscience and Philosophy
	os Boros (Professor, Faculty of Cultural Sciences, Education and Regional Development, University of Pécs, Pécs)
Gyorgy Bu	uzsáki (Professor, Neuroscience Institute, School of Medicine, New York University, New York)
10:00 - 10:25	
10:25 - 10:50	WHAT NEUROBIOLOGY TEACHES US ABOUT MORALITY Patricia Churchland Professor, University of California, San Diego
10:50 - 11:15	WHAT DOES A THEORY OF CONSCIOUSNESS NEED TO EXPLAIN Christof Koch, PhD Meritorious Investigator, Allen Institute, Seattle; Chief Scientist, Tiny Blue Dot Foundation, Santa Monica
11:15 - 11:40	OUR FOUR REALMS OF EXISTENCE Joseph LeDoux Director, The Emotional Brain Institute, NYU; Professor of Neural Science and Psychology, NYU; Professor of Psychiatry and Child & Adolescent Psychiatry, NYU Langone

11:40 - 11:50 THE MIND IN THE BRAIN FROM INSIDE OUT

out, Oxford University Press, 2019.

Reflections on György Buzsáki, The Brain from inside

and Regional Development, University of Pécs, Pécs

**János Boros** Professor, Faculty of Cultural Sciences, Education

11:50 - 12:00 Discussion

08:30 - 18:30

09:30 - 09:40

12:00 - 14:00 LUNCH BREAK

12:00 - 14:00 POSTER SESSION I.

# 14:00 - 15:45 Symposium II. Preclinical examination of autism spectrum disorder

CHAIRS: Kristóf László (Associate Professor, Institute of Physiology, Medical School and Centre for Neuroscience, University of Pécs, Pécs) Attila Tóth (Senior Lecturer, Institute of Physiology, Medical School and Centre for Neuroscience, University of Pécs, Pécs)

14:00 - 14:25 A FUNCTIONAL BRAIN NETWORK APPROACH TO STUDY VALPROIC ACID CAUSED AUTISM IN RODENTS AND THE USE OF ALTERNATIVE MODEL SPECIES IN AUTISM RESEARCH

**Gergely Zachar** Department of Anatomy, Histology and Embryology, Semmelweis University, Budapest, Hungary

- 14:25 14:50 FUNCTIONAL AND MORPHOLOGICAL ALTERATIONS OF STRIATAL NEURONS IN THE AUTISM-RELATED MODEL

  Jan Bakos Faculty of Medicine, Comenius University in Bratislava; Institute of Experimental Endocrinology, Biomedical Research Center, Slovak Academy of Sciences
- 14:50 15:15 AUTISM SPECTRUM DISORDER ASSOCIATED BEHAVIORAL SYMPTOMS AND THEIR RELATIONSHIP WITH THE MICRO-BIOME

**Kitti Mintál** Institute of Physiology, Medical School, University of Pécs; Medical and Engineering Multidisciplinary Cellular Bioimpedance Research Group, Szentágothai Research Centre, University of Pécs

15:15 - 15:40 THE INTRAAMYDALOID OXYTOCIN AMELIORATES SOME AUTISTIC-LIKE SYMPTOMS IN VALPROATE-INDUCED AUTISM RODENT MODEL

**Kristóf László** Institute of Physiology, University of Pécs, Medical School, Pécs, Hungary; Neuropeptides, cognition, animal models of neuropsychiatric disorders research group, Institute of Physiology, Medical School, University of Pécs, Pécs, Hungary; Neuroscience Center, University of Pécs, Pécs, Hungary

### 15:45 - 16:15 COFFEE BREAK

### 16:15 - 17:45 Symposium III. Molecular Biology of Stress Disorders

CHAIR: Zsuzsanna Tóth (Department of Anatomy, Histology and Embryology, Semmelweis University, Budapest)

16:15 - 16:40 DOPAMINE AND STRESS-RELATED DISORDERS: TRANS-LATION FROM STUDIES IN NEONATES TO SEARCHING THE MOLECULAR MECHANISMS IN ANIMAL MODELS Daniela Jezova Institute of Experimental Endocrinology, Biomedical Research Center, Slovak Academy of Sciences, Bratislava, Slovakia

16:40 - 17:05 BRAIN AREA-SPECIFIC INTERACTIONS BETWEEN EFFECTS
OF EARLY LIFE ADVERSITY AND CHRONIC VARIABLE
MILD STRESS IN THE THREE HIT MODEL OF DEPRESSION
Balázs Gaszner Department of Anatomy and Research Group
for Mood Disorders, Center for Neuroscience, Medical School,
University of Pécs

17:05 - 17:30 NEUROMODULATORS IN STRESS DISORDERS: EMERGENCE
OF PROLACTIN-RELEASING PEPTIDE
Zsuzsanna E. Tóth Department of Anatomy, Histology and

Embryology, Semmelweis University, Budapest, Hungary
STRESS RELATED METABOLIC CHANGES, IMPLICATION IN

17:30 - 17:45 STRESS RELATED METABOLIC CHANGES, IMPLICATION IN STRESS DISORDERS

**Dániel Kuti** Laboratory of Molecular Neuroendocrinology, Institute of Experimental Medicine, HUN-REN, Budapest, Hungary

# 17:45 - 18:30 PLENARY LECTURE: EVOLUTION OF THALAMOCORTICAL DEVELOPMENT

**Zoltán Molnár** Professor of Developmental Neuroscience, Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, United Kingdom

### 19:15 - 23:00 GALA DINNER

(Medical School, Romhányi Aula, University of Pécs)

### Friday, 26 January 2024

08:30 - 17:45 REGISTRATION, INFORMATION 08:50 -09:00 Opening of the second day

# 09:00 - 09:45 PLENARY LECTURE: TRANSLATION FROM MAN TO ANIMAL IN MIGRAINE - Buzsáki Lecture

**Jes Olesen** (Brain Prize in 2021) *Clinical Professor, Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark* 

# 09:45 - 11:15 Symposium IV. Functional investigations in human brain sample

**Co-organized by HCEMM Nonprofit Kft.** 

CHAIRS: Viktor Szegedi (Assistant Professor, Department of Physiology, Anatomy and Neuroscience, University of Szeged, Szeged) Gábor Molnár (Department of Physiology, Anatomy and Neuroscience, University of Szeged, Szeged)

# 09:45 - 10:05 DIFFERENCES IN ACTIONS OF NMDA RECEPTOR MEDIATED NEOCORTICAL ASTROCYTE-NEURON COMMUNICATION BETWEEN MICE AND HUMANS

**Balázs Pál** Department of Physiology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary; Doctoral School of Molecular Medicine, University of Debrecen, Debrecen, Hungary

10:05 - 10:30 FROM VIRAL INJECTION TO ELECTROPHYSIOLOGY AND IMAGING WITHIN 24 HOURS USING SEMLIKI FOREST VIRUS

**Albert Gidon** Humboldt-Universität zu Berlin, Charite, NeuroCure, Germany

10:30 - 10:50 ROLE OF EXCITATORY AND INHIBITORY CIRCUITS IN THE GENERATION OF SYNCHRONIES EMERGING IN THE HUMAN NEOCORTEX, IN VITRO

**Lucia Wittner** Research Centre for Natural Sciences, Budapest, Hungary

# 10:50 - 11:15 MODULATION OF GIANT DEPOLARIZING POTENTIALS (GDPS) IN HUMAN LARGE BASKET CELLS BY NOREPINEP-HRINE AND ACETYLCHOLINE

**Dirk Feldmeyer** Forschungszentrum Jülich, Jülich, Germany

11:15 - 11:45 COFFEE BREAK

# 11:45 - 13:15 Symposium V. Information processing in the early visual system; retina and retinorecipient brain centers

CHAIRS: Béla Völgyi (Professor, Institute of Biology, Department of Neurobiology, University of Pécs, Pécs) • Ildikó Telkes (Institute of Physiology, Medical School and Centre for Neuroscience, University of Pécs, Pécs) • Tamás Kovács-Öller (Research Fellow, Institute of Biology, Department of Neurobiology, University of Pécs, Pécs)

11:45 - 11:50 Introduction

# 11:50 - 12:10 THE DARK SIDE OF VISION: DETECTION OF SINGLE PHOTONS FROM THE RETINA TO PERCEPTION

**Petri Ala-Laurila** Department of Biosciences, University of Helsinki, Helsinki, Finland; Professor, Department of Neuroscience and Biomedical Engineering, Aalto University, Espoo, Finland

# 12:10 - 12:30 RETINAL GANGLION CELL DIVERSITY IN HUMANS AND NON-HUMAN PRIMATES

**Ulrike Grünert** Associate Professor, Ophthalmology and Visual Science, Faculty of Medicine and Health, Clinical Ophthalmology and Eye Health, Save Sight Institute, Sydney, Australia

# 12:30 - 12:50 GANGLION CELL GAP JUNCTIONS SUBSERVE THE DETECTION OF APPROACH MOTION IN THE RETINA

**Gergely Szarka** Szentágothai Research Centre, University of Pécs, Pécs, Hungary; Department of Neurobiology, University of Pécs, Pécs, Hungary; Center for Neuroscience, University of Pécs, Pécs, Hungary

# 12:50 - 13:10 PHYSIOLOGY OF STANDARD AND NON-STANDARD AFFERENT VISUAL PATHWAYS IN PRIMATES

**Paul R. Martin** Professor, Faculty of Medicine and Health, Clinical Ophthalmology and Eye Health, Save Sight Institute, Sydney, Australia 13:15 - 15:15 LUNCH BREAK

13:15 - 15:15 POSTER SESSION II.

### 15:30 - 17:00 Symposium VI. Neuropeptides in Health and Disease

CHAIRS: Krisztina Csabafi (Adjunct Professor, Department of Pathophysiology, Albert Szent-Györgyi School of Medicine, University of Szeged, Szeged)
Zsolt Bagosi (Associate Professor, Department of Pathophysiology, Albert Szent-Györgyi School of Medicine, University of Szeged, Szeged)

15:30 - 15:50 UNRAVELING THE COMPLEXITY: THE MULTIFACETED SIGNIFICANCE OF CRF AND UROCORTINS IN STRESS AND PSYCHIATRIC DISORDERS

**Tamás Kozicz** Professor, Department of Clinical Genomics, MayoClinic, Rochester, MN, USA

15:50 - 16:10 UROCORTINS MODULATE SOCIAL BEHAVIOR THROUGH DIFFERENT CRF RECEPTORS AND PATHWAYS

**Zsolt Bagosi** Associate Professor, Department of Pathophysiology, Albert Szent-Györgyi Medical School, University of Szeged, Szeged, Hungary

16:10 - 16:30 KISSPEPTINS ACTIVATE THE HYPOTHALAMUS-PITUITARY-ADRENAL AXIS AND INDUCE ANXIETY

> **Krisztina Csabafi** Department of Pathophysiology, Albert Szent-Györgyi Medical School, University of Szeged, Szeged, Hungary

16:30 - 16:45 THE ROLE OF OBESTATIN IN DEPRESSION-LIKE BEHAVIOR IN MICE

**Júlia Szakács** Department of Pathophysiology, Albert Szent-Györgyi Medical School, University of Szeged, Szeged, Hungary

16:45 - 17:00 OXYTOCIN RECEPTOR EXPRESSION IN PRIMARY SEN-SORY NEURONS: UNVEILING HOW OXYTOCIN AND ITS RECEPTOR CONTRIBUTE TO THE SENSORY PROCESSING AND THE MODULATION OF PAIN

> **Gyöngyi Kis** Department of Physiology, Albert Szent-Györgyi Medical School, University of Szeged and Department of Physiology, Anatomy and Neuroscience, Faculty of Science and Informatics, University of Szeged, Szeged, Hungary

### 17:00 - 17:45 PLENARY LECTURE: THE CENTRAL AMYGDALA AS A MO-TIVATIONAL HUB: PAVING THE WAY FOR PERSONALIZED THERAPIES IN BEHAVIORAL DISORDERS

**Ewelina Knapska** Associate Professor, Laboratory of Emotions Neurobiology, Nencki Institute of Experimental Biology, Warsaw, Poland

17:45 - 18:00 POSTER AWARDS, CONCLUDING REMARKS

