



Cell biology of the nervous system:

Long-term resilience and vulnerability

Programme

08-11 May 2023 | Heraklion, Greece



EMBO Workshop: Cell Biology of the nervous system



Innovative & integrated
solutions in life sciences

EMBO Workshop: Cell Biology of the nervous system

Day 1 | 08 May 2023

- 11:00-13:20 Registration
13:20-13:30 Welcome and Opening Remarks

Session 1: Development of the Nervous System: a tale of multiple players
Chair: **Prof. Dr. Irina Dudanova**

- 13:30-13:55 Extracellular Signaling in Neurodevelopmental Disorders
Silvia Cappello
- 13:55-14:10 Short Talk 1 [Golgi-dependent Reactivation and Regeneration of Quiescent Neural Stem Cells]
Mahekta Gujar
- 14:10-14:25 Short Talk 2 [A mechanism for stretch-induced growth in sensory neurons]
Agostina Di Pizio
- 14:25-14:50 Impact of endothelial cell YAP/TAZ signaling in CNS angiogenesis and neurodevelopment
Carmen Ruiz de Almodóvar
- 14:50-15:30 *Coffee Break (dedicated to coffee, meet & discuss)*

Session 2: Development of circuitry and polarity
Chair: **Dr. Mahekta Gujar**

- 15:30-15:55 Patterns of Spontaneous Activity in the Development & Plasticity of Sensory Circuits
Guillermina López-Bendito
- 15:55-16:10 Short Talk 3 [Active zone plasticity optimizes brain aging]
Chengji Piao
- 16:10-16:25 Short Talk 4 [Synaptic vesicles are axonal antioxidant patrols deficient in Huntington disease]
Anca Radu
- 16:25-16:50 Molecular mechanisms of dopaminergic circuit development
Jeroen Pasterkamp
- 17:00-19:30 Poster Session I (Refreshments offered)
- 19:30-21:00 *Dinner*
- 21:00-23:00 Speed dating (All participants interact with the Invited Speakers followed by drinks & networking)

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Day 2 | 09 May 2023

Session 3: Cytoskeleton remodelling in health and disease

Chair: **Dr. Paul Conduit**

- 09:00-09:25 Mechanisms of Axon Growth and Regeneration
Frank Bradke
- 09:25-09:40 Short Talk 5 [Golgi mediated microtubule nucleation drives peripheral neuron regeneration]
Alice Mortimer
- 09:40-09:55 Short Talk 6 [Microtubule networks are a key lesion site in ageing neurons and a key driver of]
Natalia Sanchez-Soriano
- 09:55-10:20 The functional nano-architecture of axonal actin
Christophe Leterrier
- 10:20-11:00 *Coffee Break (dedicated to coffee, meet & discuss)*

Session 4: Biology of the synapse: from microdomains to transmission

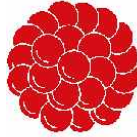
Chair: **Dr. Alice Mortimer**

- 11:00-11:25 Dynamic regulation of presynaptic function and plasticity in health and disease
Nils Brose
- 11:25-11:40 Short Talk 7 [CRMP2 isoforms in microtubule dynamics, brain development and autism]
Martin Balastik
- 11:40-11:55 Short Talk 8 [A forward genetic screen for the modifiers of synaptic autophagy]
Ayse Kilic
- 11:55-12:20 How does autophagy cope with specific synaptic needs?
Sandra Soukup
- 12:20-13:30 *Lunch*

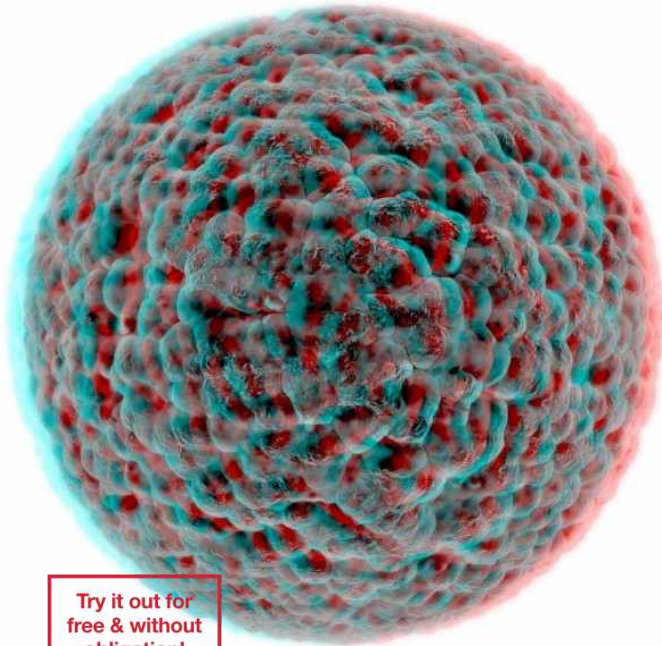
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Session 5: Shaping Neurons: unconventional points of view

Chair: **Dr. Georgia Rapti**

- 13:30-13:55 Mechanisms and function of neuronal fatty acid efflux
Maria Ioannou
- 13:55-14:10 Short Talk 9 [Ceramide Synthase at the Knot of Neurodegeneration]
Anna Ziegler
- 14:10-14:25 Short Talk 10 [Altered cerebellum mechanics in Ataxia-Telangiectasia neurodegeneration]
Giulia Bastianello
- 14:25-14:50 Molecular neurobiology by cryo-ET
Naoko Mizuno
- 14:50-15:20 *Coffee Break (dedicated to coffee, meet & discuss)*

Session 6: mRNA metabolism in the brain: from basic mechanisms to disease

Chair: **Dr. Giulia Bastianello**

- 15:20-15:45 Cell type-specific and local translation in plasticity and memory
Eric Klann
- 15:45-16:00 Short Talk 11 [Overexpressing elongation factor 1 alpha proteins to promote CST repair]
Daniel Romaus-Sanjurjo
- 16:00-16:15 Short Talk 12 [SREBP modulates the NADP⁺/NADPH cycle to control night sleep in Drosophila]
Vittoria Mariano
- 16:15-16:40 mRNA association with endosomes in developing neurons
Jean-Michel Cioni
- 16:40-17:15 *Coffee Break (dedicated to coffee, meet & discuss)*

Session 7: Long-term homeostasis: cellular and organismal mechanisms

Chair: **Dr. Vittoria Mariano**

- 17:15-17:40 Brain proteostasis from the lens of autophagic vesicles
Vassiliki Nikolettou
- 17:40-17:55 Short Talk 13 [Neuroproteasome/ApoE complex dysfunction induces endogenous Tau aggregation]
Kapil Ramachandran
- 17:55-18:10 Short Talk 14 [Chaperoning proteostasis in axons]
Sigrídur Rut Franzdóttir
- 18:10-18:35 Harnessing evolution to understand brain resilience and reverse disease
Mauro Costa Mattioli
- 18:40-20:10 Meet the Editors & Free Group Therapy (Invited Speakers meet a small group of young investigators to discuss science, career development etc)
- 20:10-21:30 *Dinner*
- 21:30-23:00 Drinks in Poster Room - Open discussion

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Journal of
Cell Science



<https://journals.biologists.com>

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Day 3 | 10 May 2023

Session 8: Axonal resilience and vulnerability

Chair: Prof. Kapil Ramachandran

- 09:30-09:55 Kinetochore Functions in Post-Mitotic Neurons
Tom Schwarz
- 09:55-10:10 Short Talk 15 [A quantitative model of sporadic axonal degeneration in Drosophila visual system]
Karolina Doubkova
- 10:10-10:25 Short Talk 16 [BORC regulates UNC-104 & Dynein-dependent intermediate compartment distribution]
Amal Mathew
- 10:25-10:50 Fusogen-mediated neuron-neuron fusion: impact on neuronal function, connectivity and behaviour.
Massimo Hilliard
- 10:50-11:30 *Coffee Break (dedicated to coffee, meet & discuss)*

Session 9: Neuron-glia crosstalk

Chair: Dr. Anna Barbara Ziegler

- 11:30-11:55 Activity dependent myelin changes in the adult CNS'
Ragnhildur Thora Karadottir
- 11:55-12:10 Short Talk 17 [A proteostasis-mechanics-ECM-junctions crosstalk ensures astroglial architecture]
Georgia Rapti
- 12:10-14:00 *Lunch*
- 14:00-14:15 Short Talk 18 [Mechanism of low NAD⁺-induced photoreceptor neuron degeneration in Drosophila]
Magdalena Kocia
- 14:15-14:40 Mechanisms of remyelination in the CNS
Mikael Simons
- 14:40-17:30 Poster Session II (Refreshments offered)
- 19:00 *Gala Dinner*

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Day 4 | 11 May 2023

Session 10: Vessel and neuronal remodeling

Chair: **Dr. Piya Ghose**

- 09:00-09:25 Instructive signals of the vasculature on CNS development
Amparo Acker-Palmer
- 09:25-09:40 Short Talk 19 [Mitochondria and the ER as opposing dynamics players in pruning]
Piya Ghose
- 09:40-09:55 Short Talk 20 [Asymmetric microtubule nucleation from Golgi within fly neurons]
Paul Conduit
- 09:55-10:20 A three-dimensional blood-brain barrier model to investigate cerebral malaria
Maria Bernabeu Aznar
- 10:20-11:00 *Coffee Break (dedicated to coffee, meet & discuss)*

Session 11: Cancer and neuronal vulnerability

Chair: **Dr. Agostina Di Pizio**

- 11:10-11:35 Modeling brain cancer with human organoids
Luca Tiberi (EMBO Young Investigator Lecture)
- 11:35-11:50 Short Talk 21 [Heat Stress Induced Translation Reprogramming in the Mammalian CNS]
Caitlin Seluzicki
- 11:50-12:05 Short Talk 22 [Heterogeneous SMN Protein Levels Driving Selective Motor Neuron Vulnerability]
Joshua Thomas
- 12:05-12:20 Short Talk 23 [snRNA-seq reveals vulnerability of cortical cell types in Huntington's disease]
Irina Dudanova
- 12:20-12:30 Closing Remarks
- 12:30-14:00 *Lunch & Departure*

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Invited Speakers

Amparo Acker Palmer

Goethe Universitaet, Frankfurt, DE

Maria Bernabeu Aznar

EMBL Barcelona, ES

Frank Bradke

DZNE, DE

Nils Brose

Max Planck Institute for Multidisciplinary Sciences, Goettingen, DE

Silvia Cappello

Max Planck Institute of Psychiatry and Ludwig Maximilian University of Munich, DE

Jean-Michel Cioni

IRCCS Ospedale San Raffaele, Milan, IT

Mauro Costa-Mattioli

Altos Labs, US

Massimo Hilliard

University of Queensland

Maria Ioannou

University of Alberta, CA

Thora Karadottir Ragnhildur

Wellcome - MRC Cambridge Stem Cell Institute, UK

Eric Klann

Center for Neural Science, New York University, US

Christophe Leterrier

INP, CNRS-Aix Marseille Université, FR

Guillermina Lopez Bendito

Instituto de Neurociencias, ES

Naoko Mizuno

NIH, US

Vassiliki Nikolettou

University of Lausanne, CH

Jeroen Pasterkamp

University Medical Center Utrecht Brain Center, NL

Carmen Ruiz de Almodovar

University of Bonn, DE

Thomas Schwarz

Boston Children's Hospital and Harvard Medical School, US

Mikael Simons

TU Munich & DZNE, DE

Sandra-Fausia Soukup

University Bordeaux, FR

Luca Tiberi

CIBIO, University of Trento, IT

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