



Systems- **IN** - Action

Advances in brain circuit research in systems and behavior

March 16-17-18, 2026

Instituto de Neurociencias, Alicante, Spain

PROGRAM

	Monday 16/3	Tuesday 17/3	Wednesday 18/3
10:00 - 12:00	Pre-meeting courses	Session 2 (30' + 10Q)	Session 4 (30' + 10Q)
12:00 - 12:30		Coffee Break	
12:30 - 13:30		Short talks 2 (15' + 5Q)	Short talks 3 (15' + 5Q)
13:30 - 14:15		Lunch	
14:15 - 14:30		Welcome	
14:30 - 16:30	Session 1 (30' + 10Q)	Session 3 (30' + 10Q)	Session 5 (30' + 10Q)
16:30 - 17:00	Coffee Break		
17:00 - 18:00	Short talks 1 (15' + 5Q)	Panel discussion	Short talks 4 (15' + 5Q)
18:00 - 20:00	Posters & Beers	Posters & Beers	

Session 1 (Chair: Isabel Pérez-Otaño - Instituto de Neurociencias, Alicante)

Michael Häusser - UCL, London, UK

Illuminating links between neural circuit activity and behavior

Marie Carlen - Karolinska Institute, Stockholm, Sweden

A prefrontal cortex map based on single neuron activity

Carl Petersen - EPFL, Lausanne, Switzerland

Cortical contributions to context-dependent goal-directed sensorimotor transformation

Session 2 (Chair: Ramón Reig - Instituto de Neurociencias, Alicante)

Ole Kiehn - University of Copenhagen, Denmark

Motor circuits prioritizing safety-seeking

Megan Carey - Champalimaud, Lisbon, Portugal

Creating coordination in the cerebellum

Chris de Zeeuw - Erasmus University, Rotterdam, Netherlands

Dynamism in the Olivocerebellar System during Learning

Session 3 (Chair: Andreas Kardamakis - Instituto de Neurociencias, Alicante)

Matteo Carandini - UCL, London, UK

Brain-wide sequences of neural activity

Tony Zador - Cold Spring Harbor Laboratory, USA

From Connectome to Computation

Maurizio Mattia - Istituto Superiore di Sanità, Rome, Italy

Learning to infer transitively on a mental line in premotor cortex

Session 4 (Chair: Guillermina López-Bendito - Instituto de Neurociencias, Alicante)

Bence Ölveczky - Harvard University, USA

Using neuro-biomechanical simulations to understand neural control of learned behavior.

Marta Navarrete - Instituto Cajal, Madrid, Spain

ASTROENGRAMS: Discovering the Power of Activated Astrocyte Ensembles in Learning and Memory

Zachary Mainen - Champalimaud Foundation, Lisbon, Portugal

Serotonin and the regulation of adaptive behavior

Session 5 (Chair: Paul Verschure - Univ. Miguel Hernández, Alicante)

Gilad Silberberg - Karolinska Institute, Stockholm, Sweden
Direct Excitation of Substantia Nigra pars reticulata by Motor Cortex

Emilie Macé - University Medical Center Göttingen, Germany
Arousal engages a spatiotemporal wave of brain activity independently of tonic noradrenaline

Máté Lengyel - Cambridge University, UK
Uncertainty in navigation

Panel Discussion (Moderators: Andreas Kardamakis - John Wesseling)

Matteo Carandini, Megan Carey, Andreas Tolias and Tony Zador

Pre-meeting courses

Pierre Le Merre - CNRS, Lyon, France
High-density extracellular electrophysiology - methods and analysis

Jiannis Taxidis - The Hospital for Sickkids - University of Toronto, Canada
Optical interrogation of neural circuits: An intro to 2P calcium & voltage imaging

Alex Roxin - Centre de Recerca Matemàtica, Barcelona, Spain
Computational Neuroscience: Past, Present and Future

Maurizio Mattia - Istituto Superiore di Sanità, Rome, Italy
Digital Twins in Neuroscience: Recurrent Neural Networks as Windows into Brain Function

Short talks 1 (Chair: Félix Leroy - Instituto de Neurociencias, Alicante)

Juliana Martins da Rosa - Hospital Nacional de Paraplégicos, Toledo, Spain
Astrocytic Control of Cortical Ensembles Ensures Accurate Sensory-Guided Behavior.

John Wesseling - Instituto de Neurociencias, Alicante
Sub-synaptic architecture: Small parts that might be relevant to biological computation at every level

Alex Roxin - Centre de Recerca Matemàtica, Barcelona, Spain.
Network structure stabilizes neural manifolds under representational drift

Short talks 2 (Chair: Sandra Jurado - Instituto de Neurociencias, Alicante)

Andreas Kardamakis - Instituto de Neurociencias, Alicante

To look or Not to look: a fronto-collicular circuit for routing visuospatial distractors into behavior

Sofie Ährlund-Richter - Picower Institute, MIT, Cambridge USA

Prefrontal Cortex Feedback Reshapes the Representation and Routing of Visual Information

Ramon Reig - Instituto de Neurociencias, Alicante

Interhemispheric Integration of Whisker Inputs in the Barrel Cortex

Short talks 3 (Chair: Santiago Canals - Instituto de Neurociencias, Alicante)

Felix Leroy - Instituto de Neurociencias, Alicante

The neural circuits of social preferences

Mario Martin Fernandez - Instituto Cajal, Madrid, Spain

Complementary contributions of distinct inhibitory neuronal populations to defensive behaviors.

Patricia Molina - University of Lausanne, Switzerland

Neuronal dynamics underlying depressive-like states

Short talks 4 (Chair: Silvia De Santis - Instituto de Neurociencias, Alicante)

Ego-Stengel Valerie - NeuroPSI, Paris, France

Feedback from the future : Sensing before Touching disrupts motor control

Jiannis Taxidis - The Hospital for Sickkids - University of Toronto, Canada

The role of inhibition in shaping memory-encoding hippocampal spiking sequences

Isabel del Pino - Instituto de Neurociencias, Alicante

Sodium Leak Conductance from Membrane to Network: Impacts on Cortical Circuits

