

# IBRO-KEMALI SCHOOL IN NEUROSCIENCE 2015

September 28 - October 3, 2015 – Sala Conferenze CNR NA/3,  
Institute of Biomolecular Chemistry (ICB), CNR of Pozzuoli (Naples), Italy



## CANNABINOID FUNCTION IN SYNAPSES, CIRCUITS AND BRAIN: FROM MOLECULES TO DISEASE MECHANISMS



**Monday, 28 September**

**14.00-16.00**      **Arrival and Registration**

**Opening session**

**16.00-16.10**      Welcome / Introduction to the School by the Organizer,  
**Luigia Cristino** (ICB, CNR, Italy)

**16.10-16.20**      Welcome by the Director of the host Institution,  
**Vincenzo Di Marzo** (ICB, CNR, Italy)

**16.20-16.50**      Opening Remarks by the President of the CNR, **Luigi Nicolais**

**16.50-17.10**      Announcement of the "INCIPIT-COFUND international PhD  
programme of the CNR", **Monica Autiero** (Institute of Genetics  
and Biophysics, CNR, Italy)

**17.10-17.40**      Opening Remarks by the Past President of the International Brain  
Research Organization (IBRO), **Carlos Belmonte** (IBRO-Kemali  
Foundation and Institute of Neuroscience of Alicante, Spain)

**17.40-18.00**      Greetings from the Vice President of the Mediterranean Society of  
Neuroscience (MNS), **Liana Fattore** (Institute of Neuroscience,  
CNR, Italy)

**18.00-18.30**      **Opening Address: Marina Bentivoglio** (IBRO-Kemali  
Foundation and University of Verona, Italy)  
"The never ending story of Mediterranean Neuroscience,  
remembering Dargut and Milena Kemali"

**19.00**              **Cocktail and Reception Dinner**

**Session 1      Cannabinoid receptor signaling in synapse physiology**

**9.30-10.15**      **Lecture 1. Tibor Harkany** (Medical University of Vienna, Austria) "Endocannabinoid codes for neuronal diversity"

**10.15-11.00**      **Lecture 2. Zsolt Lenkei** (CNRS ESPCI ParisTech PSL Research University, France) "Cannabinoid-induced actomyosin contractility in neuronal development and function"

**11.00-11.15**      **Coffee-Break**

**11.15-12.00**      **Lecture 3. Alexej Verkhratsky** (University of Manchester, UK) "Introduction into physiology and pathophysiology of astroglia"

**12.00-12.45**      **Lecture 4. Michela Matteoli** (University of Milan and Institute of Neuroscience, CNR, Italy) "Multimodal microglial modulation of neuronal functions"

**12.45-14.15**      **Lunch & preparation for the discussion of lectures by students in groups**

**14.15-15.30**      **Discussion of Lectures 1-4**

**15.30-16.15**      **Lecture 5. Pierre Magistretti** (Brain Mind Institute, Federal Polytechnical School of Lausanne, Switzerland) "Neuron-glia metabolic coupling: role in neuronal plasticity and functional imaging"

**16.15-16.30**      **Discussion of Lectures 5**

**16.30-16.45**      **Coffee-Break**

**16.45-17.45**      Roundtable on international networking, led by **Vincenzo Di Marzo** (Director of ICB-CNR), **Liana Fattore** (Vice-President of the MNS), **Pierre Magistretti** (President of IBRO)

**17.45**      **Shuttle transfer from ICB-CNR to hotel**

**18.30-19.30**      *Meeting Room, Hotel Cala Moresca*: Hands-on training and tutorial in LEICA SUPER STORM high resolution-imaging. **Tommaso Cerullo** (Confocal and Super Resolution Microscopy Unit, Leica Microsystems, Milan, Italy)

**20.00**      **Dinner**

**Session 2: Cannabinoids in circuits underlying energy homeostasis**

**9.30-10.15** **Lecture 6. Daniela Cota** (INSERM, Bordeaux, France)  
"The role of the endocannabinoid system in the CNS regulation of energy balance"

**10.15-11.00** **Lecture 7. Mohamed Najimi** (Sultan Moulay Slimane University, Beni Mellal, Morocco) "Stress and neuro-hormonal control of food-intake"

**11.00-11.30** **Coffee-Break**

**11.30-12.15** **Lecture 8. Marina Bentivoglio** (University of Verona, Italy)  
"I eat and I am therefore awake: synaptic plasticity in sleep-wake regulation"

**12.15-13.00** **Lecture 9. Matthias Tschop** (Helmholtz Zentrum and Technische Universität, München, Germany)  
"Targeting the CNS to restore metabolic control"

**13.00-14.30** **Lunch & preparation for the discussion of lectures by students in groups**

**14.30-16.00** **Discussion of Lectures 6-9**

**16.00-16.45** **Lecture 10. Takeshi Sakurai** (Kanazawa University, Kanazawa, Japan) "Neural circuit of orexin neurons, and its role in regulating the sleep/wakefulness states"

**16.45-17.00** **Discussion of Lecture 10**

**17.00** **Shuttle transfer from ICB-CNR to hotel**

**18.00-19.00** *Meeting Room, Hotel Cala Moresca*

Hands-on training and tutorial in ALLEN ATLAS for brain advanced imaging of gene expression. **Terri Gilbert** (Allen Institute, Seattle, WA, U.S.A.)

**19.00-19:45** Preparation of a project based on Allen Atlas resources: students in groups.

**20.00** **Dinner**

**Session 3: Cannabinoid receptor signaling in disease**

**9.30-10.15** **Lecture 11. Diego Centonze** (University of Tor Vergata, Rome and Istituto Neurologico Mediterraneo Neuromed, Pozzilli, Italy) "Role of the endocannabinoid system in the control of inflammatory synaptopathy"

**10.15-11.00** **Lecture 12. Mauro Maccarrone** (Campus Bio-Medico University of Rome and European Center for Brain Research/Santa Lucia Foundation IRCCS, Rome, Italy) "Membrane cholesterol drives endocannabinoid signaling and metabolism"

**11.00-11.30** **Coffee-Break**

**11.30-12.15** **Lecture 13. Liana Fattore** (Institute of Neuroscience, CNR, Italy) "Synthetic cannabinoids and psychosis-like effects"

**12.15-13.00** **Lecture 14. Daniela Parolaro** (University of Insubria, Milan, Italy) "Cannabis abuse in adolescence, risk factor for psychiatric diseases: animal models"

**13.00-14.30** **Lunch & preparation for the discussion of lectures by students in groups**

**14.30-16.00** **Discussion of Lectures 11-14**

**16.00-17.00** Hands-on tutorial in the biochemistry of neuroactive lipid and lipid-derived mediator extraction, purification and LC-MS-MS analysis. **Adele Cutignano** and **Fabiana Piscitelli** (ICB, CNR, Italy)

**17.00** **Shuttle transfer from ICB-CNR to hotel**

*Meeting Room, Hotel Cala Moresca*

**17.45-18.45** Hands-on training and tutorial in the "ALLEN ATLAS for brain advanced imaging of neuroanatomy and connectivity". **Terri Gilbert** (Allen Institute, Seattle, WA, U.S.A.)

**18.45-19.45** Preparation of a project based on Allen Atlas resources: students in groups.

**20:00** **Dinner**

**Session 4: Endocannabinoids and related molecules in neuroinflammation: novel therapeutic strategies**

*Sponsored by Epitech Group*

**9.30-10.15** **Lecture 15. Juan Lerma** (Institute of Neuroscience and Universidad Miguel Hernández, Alicante, Spain) "The kainate and cannabinoid receptors: common role and signaling pathway"

**10.15-11.00** **Lecture 16. Javier Fernandez-Ruiz** (Universidad Complutense, Madrid, Spain) "Endocannabinoid signaling: neuroprotection or neurodegeneration?"

**11.00-11.30** **Coffee-Break**

**11.30-12.15** **Lecture 17. Sabatino Maione** (Second University of Naples, Italy) "Neuropathic pain: focus on neuron-glia interactions and endocannabinoid-related molecules"

**12.15-13.00** **Lecture 18. Alfonso Araque** (University of Minnesota, Minneapolis, MN, U.S.A.) "Synaptic regulation by endocannabinoids through astrocyte signaling"

**13.00-14.30** **Lunch & preparation for the discussion of lectures by students in groups**

**14.30-16.00** **Discussion of Lectures 15-18**

**16.00-16.45** **Lecture 19. Vincenzo Di Marzo** (ICB, CNR, Italy) "Novel strategies for endocannabinoid- and phytocannabinoid-based drug development"

**16.45-17.00** **Discussion of Lecture 19**

**17.00-18.30** Presentation of projects based on the use of the Allen Atlas resources: students in groups.

Prize for the best project, certificates.

**18.45** **Shuttle transfer from ICB-CNR to hotel**

**20.00** **Dinner and reception**

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## ALLEN BRAIN PROJECT AWARD COMMITTEE

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