

# **2012 RICARDO MILEDI NEUROSCIENCE TRAINING PROGRAM**

## **Neuroscience: synapses, circuits and behavior**



**March 5 – 30, 2012 - Buenos Aires, Argentina**

**Instituto Leloir, CONICET**

**Facultad de Medicina and Facultad de Ciencias Exactas y Naturales, UBA**

**Instituto de Investigaciones en Ingeniería Genética y Biología Molecular (INGEBI, CONICET)**

**Instituto de Fisiología, Biología Molecular y Neurociencias (IFIBYNE, UBA-CONICET)**

**School Directors:**

**Alejandro Schinder and Osvaldo Uchitel**

**Organizing Committee:**

**Daniel Calvo, Arturo Romano**

**Organizing Institutions:**

**Society for Neuroscience (SFN)/The Grass Foundation**

**and Sociedad Argentina de Investigación en Neurociencias (SAN)**

**SCHEDULE FOR OPEN LECTURES AND SYMPOSIA**

## LOCAL FACULTY

**Daniel Calvo** (INGEBI)  
**Fernanda Ceriani** (Leloir)  
**Alejandro Delorenzi** (IFIBYNE)  
**Belén Elgoyhen** (INGEBI)  
**Tomás Falzone** (F Medicina)  
**Diego Golombek** (UNQUI)  
**Juan Goutman** (INGEBI)  
**Eleonora Katz** (INGEBI)  
**Guillermo Lanuza** (Leloir)  
**Fernando Locatelli** (IFIBYNE)  
**Antonia Marin-Burgin** (Leloir)  
**Gustavo Murer** (F Medicina)

**Fernanda Ledda** (F Medicina)  
**Gustavo Paratcha** (F Medicina)  
**M. Eugenia Pedreira** (IFIBYNE)  
**Arturo Romano** (IFIBYNE)  
**Marcelo Rubinstein** (INGEBI)  
**Arleen Salles** (Centro de Invest. Filosóficas)  
**Alejandro Schinder** (Leloir)  
**Lidia Szczupak** (IFIBYNE)  
**Daniel Tomsic** (IFIBYNE)  
**Oswaldo Uchitel** (IFIBYNE)  
**Francisco Urbano** (IFIBYNE)

## INVITED FACULTY

**Carlos Aizenman** (Brown University, Rhode Island, USA)  
**Benedikt Berninger** (Helmholtz Zentrum, Munich)  
**Pablo Castillo** (Albert Einstein College of Medicine, New York, USA)  
**Fabrizio Gabbiani** (Baylor College of Medicine, Houston, TX, USA)  
**Guillermo González-Burgos** (University of Pittsburgh School of Medicine, USA)  
**Francois Guillemot** (National Institute for Medical Research, London, UK)  
**Isabel Llano** (University of Paris)  
**Andreas Luthi** (Friedrich Miescher Institute, Basel, Switzerland)  
**Alain Marty** (University of Paris)  
**Ralph Schneggenburger** (Ecole Polytechnique Fédérale de Lausanne, Switzerland)  
**Nick Spitzer** (UC San Diego)

## LAB INSTRUCTORS

**Facundo Alvarez Heduán, Andrea Beltrán González, Mariano Belluscio, Martín Berón de Astrada, Barbara Braz, Abel Carcagno, Lucas Cromberg, Ana Depetris-Chauvin, Daniela Di Bella, Mariano DiGuilmi, Mariela Escande, Noel Federman, Rodrigo Fernández, Cecilia Forcato, Lía Frenkel, Ramiro Freudenthal, Javier Gasulla, Carlota Gonzalez Inchauspe, Axel Gorostiza, , María Eugenia Martín, Javier Maza, Lucas Mongiat, Nara Muraro, Gabriela Otero, Joaquin Piriz, María Laura Rodríguez, Elisa Schneider, Carolina Wedemeyer.**

**COURSE SECRETARY: Silvina Ceriani**

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## MILEDI SCHOOL 2012: OPEN LECTURES AND SYMPOSIA

Lectures and symposia will take place at Leloir Institute

### SYMPOSIA

 Friday March 9

**Miledi School Symposium I: Neuronal signaling**

9.30 Isabel Llano (University of Paris)

Presynaptic calcium signaling

10.10 Alain Marty (University of Paris)

A direct estimate of the readily releasable pool of synaptic vesicles obtained with a new single-site calcium uncaging method

10.50 Ralph Schneggenburger (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

Bone morphogenetic protein (BMP) signaling is essential for synapse remodelling in a CNS auditory circuit

11.30

Coffee break

12.00 Benedikt Berninger (Helmholtz Zentrum, Munich)

Direct conversion of somatic cells of astroglial and pericytic origin into functional neurons

12.40-13.20 Nick Spitzer (UC San Diego)

Stress-induced neurotransmitter switching in the adult brain regulates responses to stress

 Friday March 23

**Miledi School Symposium II: Neuronal circuits**

9.30 Guillermo González-Burgos (University of Pittsburgh School of Medicine, USA )

Endocannabinoid-mediated suppression of inhibition in prefrontal cortex: synthesis pathways, development and modulation by THC administration

10.15 Pablo Castillo (Albert Einstein College of Medicine, New York , USA)

Activity-dependent synaptic plasticity expressed by NMDA receptors

11.00

Coffee break

11.30 Andreas Luthi (Friedrich Miescher Institute, Basel, Switzerland)

Defining the neuronal circuitry of fear and beyond

12.15-13.00 Carlos Aizenman (Brown University, Rhode Island, USA)

Functional regulation of a developing visual circuit



**Friday March 30**

## **Miledi School Symposium III**

**9.30 Francois Guillemot (National Institute for Medical Research, London, UK)**  
**Transcriptional control of neuronal stem cell fates**

**10.20 Fabrizio Gabbiani (Baylor College of Medicine, Houston, TX, USA)**  
**Looming-sensitive neurons and neural computations underlying collision avoidance behaviors**

11.10 Coffee break

**11.40-12.10 Arleen Salles (Centro de Invest. Filosóficas)**  
**Neuroethics**

## **LECTURES**



**Monday March 12**

**9.00 Daniel Calvo: Redox modulation of the GABAergic neurotransmission**

10.30 Coffee Break

**11.00-12.30 Eleonora Katz: From sound to synapses at the mammalian auditory periphery**



**Tuesday March 13**

**9.00 Gustavo Paratcha/Fernanda Ledda: Neurotrophic Factors: A window into nervous system development**

10.30 Coffee Break

**11.00-12.30 Tomás Falzone: Neuronal Polarity: The Orchestrated Role of Microtubules, Molecular Motors and Cargos**



**Wednesday March 14**

**9.00 Marcelo Rubinstein: Transgenic and mutant mice to understand gene function in the mammalian brain (including 10 min of laboratory animals)**

10.30 Coffee Break

**11.00-12.30 Guillermo Lanuza: Neuronal subtype specification in the neural tube. Insights from developmental genetics.**



**Thursday March 15**

**9.00 Alejandro Schinder: Adult Neurogenesis**

10.30 Coffee Break

**11.00-12.30 Antonia Marin Burgin: Excitation/Inhibition balance in adult neurogenesis**



**Friday March 16**

**9.00 Francisco Urbano: Thalamocortical interactions in health and disease**

10.30 Coffee Break

**11.00-12.30 Gustavo Murer: Neuronal activity underlying global brain states**

 **Monday March 19**

**9.00 M. Eugenia Pedreira: Study of the different memory phases from the acquisition to extinction. Characterization of the diverse phases in a declarative memory in humans**

10.30 Coffee Break

**11.00-12.30 Arturo Romano: The molecular basis of the different phases of memory**

 **Tuesday March 20**

**9.00 Alejandro Delorenzi: Modulation of memory**

10.30 Coffee Break

**11.00-12.30 Fernando Locatelli: Olfaction: Sensation, perception and plasticity**

 **Thursday March 22**

**9.00-12.30 Guillermo González Burgos 3-h lecture w/30 min break**

**GABAergic inhibition in cortical circuits: now that we know what we know, what do we know?**

10.30 Coffee Break

**Schizophrenia: are cognitive deficits the consequence of altered synaptic transmission in cortical circuits?**

 **Monday March 26**

**9.00 Fernanda Ceriani: Neuronal control of circadian behavior in flies**

10.30 Coffee Break

**11.00-12.30 Diego Golombek: Circadian rhythms and clocks: a tale of extreme localization in the (mammalian) brain**

 **Tuesday March 27**

**9.00 Lidia Szczupak: Motor control in the leech nervous system. A model where single cells matter.**

10.30 Coffee Break

**11.00-12.30 Daniel Tomsic: Neuroethology of escape responses: from sensory ecology to neurons and back**

 **Wednesday March 28**

**9.00-12.30 Francois Guillemot: Signaling and transcriptional control of neuronal development from stem cells to synapses**