

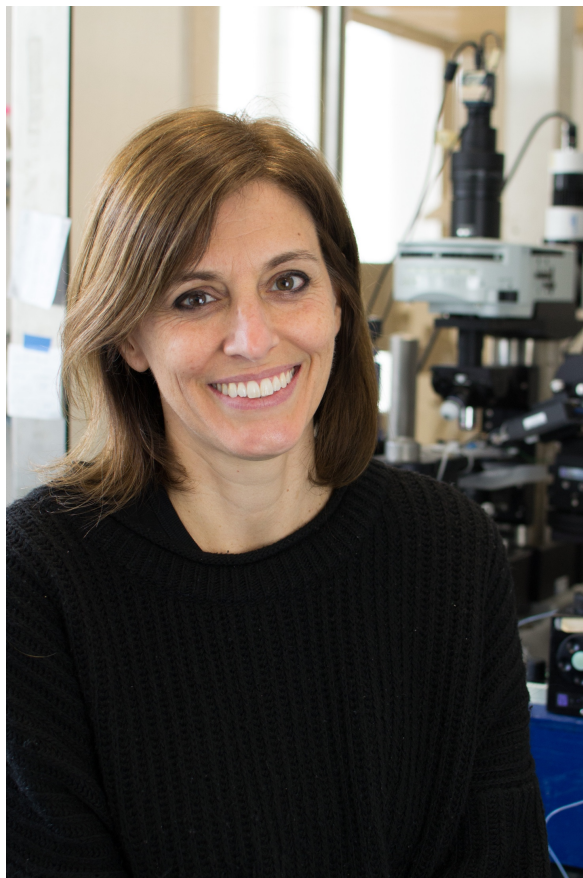
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# CRISTINA MARCHETTI

**Group Leader**

**Regulation of neuronal excitability in  
physiological  
and pathological conditions Laboratory**

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Cristina Marchetti obtained a Degree in Physics at University “La Sapienza”, with a Master’s thesis in Biophysics, studying the modulation of nicotine receptors. She then did her PhD at the International School for Advanced Studies (SISSA) in Trieste, Italy in the group of Prof. Andrea Nistri. Here, she focused on spinal cord circuits that generate rhythms underlying locomotion, uncovering new ways of activating these circuits both by electrical and pharmacological stimulation. She then moved to the National Institutes of Health (NIH, Bethesda, Maryland), under the supervision of Dr. Michael O’Donovan, and later to the Center for Neural Science at New York University. Here she integrated her experimental approach with computational methods to study the activity of neural networks both in spinal cord (with Prof. John Rinzel) and cortex (with Dr. Alex Reyes). At the end of 2006, she joined the laboratory of Dr. Hélène Marie at the European Brain Research Institute (EBRI)-Fondazione Rita Levi-Montalcini, working on hippocampal synaptic plasticity. In 2012, she

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became Junior Group Leader in the same Institute, continuing her work on synaptic transmission as well as on neuronal excitability, in physiological and pathological conditions, with a special focus on Alzheimer's disease.

### **Instruction and Position**

1998 Master's Degree in Physics, University La Sapienza, Rome, Italy

2002 PhD Biophysics, International School for Advanced Studies (SISSA), Trieste, Italy

2003-2004 Post-doctoral Fellow, NINDS, NIH, Bethesda, Maryland (USA)

2004-2006 Post-doctoral Fellow, New York University, New York (USA)

2007-2012 Post-doctoral Fellow, European Brain Research Institute (EBRI)- Fondazione Rita Levi-Montalcini

2012- Present Group Leader, European Brain Research Institute (EBRI) - Fondazione Rita Levi-Montalcini

### **Publications**

#### **2020**

Rizzello E., Middei S., Marchetti C. "Synaptic Correlates of Anterograde Amnesia and Intact Retrograde Memory in a Mouse Model of Alzheimer's Disease". *Accepted for Publication at Current Alzheimer Research.*, **2020**

#### **2016**

Lupascu CA , Morabito A, Merenda E, Marinelli S, **Marchetti C**, Migliore R, Cherubini E, Migliore M. A General Procedure to Study Subcellular Models of Transsynaptic Signaling at Inhibitory Synapses *Frontiers in Neuroinformatics*, 10:23. doi: 10.3389/fninf.2016.00023 **2016**

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## 2014

Bianchi D, De Michele P, **Marchetti C**, Tirozzi B, Cuomo S, Marie H, Migliore M. Effects of increasing CREB-dependent transcription on the storage and recall processes in a hippocampal CA1 microcircuit. *Hippocampus*, Feb;24(2):165-77. **2014**

## 2013

Romani A., Marchetti C., Bianchi D., Leinekugel X., Poirazi P., Migliore M., Marie H. Computational modeling of the effects of amyloid-beta on release probability at hippocampal synapses. *Frontiers in Computational Neuroscience*, 7:1. DOI: 10.3389/fncom.2013.00001, **2013**

## 2012

Bianchi D., Marasco A., Limongiello A., Marchetti C., Marie H., Tirozzi B., Migliore M. On the mechanisms underlying the depolarization block in the spiking dynamics of CA1 pyramidal neurons *Journal of Computational Neuroscience*, 33(2): 207-25. doi: 10.1007/s10827-012-0383-y, **2012**

## 2011

**Marchetti C**, Marie H. Hippocampal synaptic plasticity in Alzheimer's disease: what have we learned so far from transgenic models? *Reviews in the Neurosciences*; 22(4):373-402, **2011**

**Marchetti C**, Tafi E, Marie H. Viral-mediated expression of a constitutively active form of cAMP response element binding protein in the dentate gyrus increases long term synaptic plasticity. *Neuroscience*. 190:21-6, **2011**

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Vetere G\*, **Marchetti C\***, Benevento M, Tafi E, Marie H, Ammassari-Teule M. Viral-mediated expression of a constitutively active form of CREB in the dentate gyrus does not induce abnormally enduring fear memory. *Behav Brain Res.* 222:394-6 \*equal contributors, 2011

D'Amelio M, Cavallucci V, Middei S., **Marchetti C.**, Pacioni S., Ferri A., Diamantini A., De Zio D., Carrara P., Battistini L., Moreno S., Marie H., Bacci A., Ammassari-Teule M., and Cecconi F. Non-apoptotic caspase-3 activity triggers synaptic degeneration at the onset of Alzheimer's Disease. *Nature Neuroscience.* 14: 69-76, **2011**

## **2010**

Houeland G., Romani A., **Marchetti C.**, Amato G., Capsoni S., Cattaneo A., Marie H Transgenic mice with chronic NGF deprivation and Alzheimer's disease-like pathology, display hippocampal region-specific impairments in short- and long-term plasticities. *Journal of Neuroscience*, 13089-94: 69-76, **2010**

**Marchetti C., Tafi E., Middei S., Rubinacci MA., Restivo L., Ammassari-Teule M., Marie H. Synaptic Adaptations of CA1 Pyramidal Neurons Induced by a Highly Effective Combinational Antidepressant Therapy. *Biological Psychiatry.* 67: 146-54, 2010.**

## **2008**

**de la Rocha J., Marchetti C., Schiff M., Reyes A.D. Linking the response properties of cells in auditory cortex with network architecture: cotuning versus lateral inhibition. *Journal of Neuroscience*, 28: 9151-63, 2008.**

## **2005**

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**Marchetti C.**, Tabak J., Chub N., O'Donovan M.J., Rinzel J. Modeling spontaneous activity in the developing spinal cord using activity-dependent variations of intracellular chloride. *Journal of Neuroscience*, 25:3601-3612, **2005**.

**Marchetti C.**, Taccola G., Nistri A. Activation of group I metabotropic glutamate receptors depresses recurrent inhibition of motoneurons in the neonatal rat spinal cord in vitro *Experimental Brain Research*, 164: 406-410, **2005**.

## **2004**

Taccola G., **Marchetti C.**, Nistri A. Role of group II and III metabotropic glutamate receptors in rhythmic patterns of the neonatal rat spinal cord in vitro. *Experimental Brain Research*, 156: 495-504, **2004**.

Taccola G., **Marchetti C.**, Nistri A. Modulation of rhythmic patterns and cumulative depolarization by group I metabotropic glutamate receptors in the neonatal rat spinal cord in vitro. *European Journal of Neuroscience*, 19: 533-541, **2004**.

## **2003**

Taccola G., **Marchetti C.**, Nistri A. Effect of metabotropic glutamate receptor activity on rhythmic discharges of the neonatal rat spinal cord in vitro. *Experimental Brain Research*, 153: 388-93, **2003**.

**Marchetti C.**, Taccola G., Nistri A. Distinct subtypes of group I metabotropic glutamate receptors on rat spinal neurons mediate complex facilitatory and inhibitory effects. *European Journal of Neuroscience*, 18:1873-83, **2003**.

## **2002**

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**Marchetti C.**, Pagnotta S., Donato R., Nistri A. "Inhibition of spinal or hypoglossal motoneurons of the newborn rat by glycine or GABA". *European Journal of Neuroscience*, 15: 975-983, **2002**.

**2001**

**Marchetti C.**, Nistri A. "Neuronal bursting induced by NK<sub>3</sub> receptor activation in the neonatal rat spinal cord in vitro". *Journal of Neurophysiology*, 86: 2939-2950, **2001**.

**Marchetti C.**, Beato M., Nistri A. "Evidence for increased extracellular K<sup>+</sup> as an important mechanism for dorsal root induced alternating rhythmic activity in the neonatal rat spinal cord in vitro". *Neuroscience Letters*, 304: 77-80, **2001**.

**Marchetti C.**, Beato M., Nistri A. "Alternating rhythmic activity induced by dorsal root stimulation in the neonatal rat spinal cord in vitro" *Journal of Physiology*, 530: 105-12, **2001**.

**1999**

Giniatullin R., Di Angelantonio S., **Marchetti C.**, Sokolova E., Khiroug L., Nistri A. "Calcitonin gene-related peptide rapidly downregulates nicotinic receptor function and slowly raises intracellular Ca<sup>2+</sup> in rat chromaffin cells in vitro." *Journal of Neuroscience*, 19: 2945-53, **1999**.