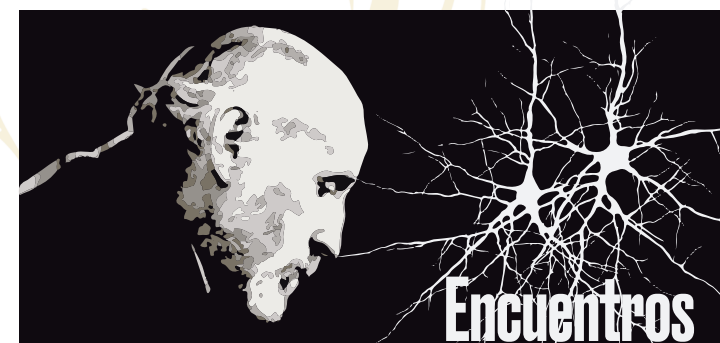


To commemorate the 90th anniversary of the death of the Spanish neuroscientist Santiago Ramón y Cajal, the Embassy of Spain in Italy and the European Brain Research Institute 'Rita Levi-Montalcini' (EBRI) are co-organizing the 'Encuentros Cajal Italy'. The event is held in the framework of the Spanish 2024-2025 'Encuentros Cajal' initiative, which pays tribute to the Nobel Laureate in different countries. The project has a dual purpose: to foster collaboration and synergies between scientists, towards a knowledge sharing network; to promote "open science", outreach and dissemination activities for the general public. The Rome event will explore the bidirectional interactions between Neurosciences and Artificial Intelligence (AI). Neuroscience has been a critical driver of progress in AI, however the current pace of dramatic developments makes communication and collaboration between the two fields difficult, but also urgent. We shall discuss the role of brain understanding in accelerating AI research, and, reciprocally, the symmetric role of Neuroscience-inspired ideas that will lead to the next generation of AI technologies. What can Neuroscience teach AI? How can AI increase our understanding of brain functions? The cross-talk of ideas between AI and Neuroscience will create a "virtuous cycle" at their intersection, advancing the knowledge in unforeseen directions – but only if there is a large enough community of scholars and researchers fluent in both domains. We must train a new generation of AI researchers who are equally at home in engineering/computational science and Neuroscience. And vice versa.

*"Even more appealing than virgin forest was the jungle lying before me at that moment: the nervous system, with its billions of cells gathered in populations each different from the other and all locked into the apparently inextricable nets of the nervous circuits which intersect in all directions along the cerebrospinal axis. The pleasure I was already savoring in anticipation was enhanced by the prospect of carrying out the project under the conditions contingent on the prohibitive racial laws. If Ramón y Cajal, with his giant's step and exceptional intuition, had dared foray into that jungle, why should I not venture along the path he had opened for me?"*

LEVI-MONTALCINI, R. 1988.  
IN PRAISE OF IMPERFECTION.  
BASIC BOOKS, NEW YORK, P. 90

Registration is required to participate [LINK](#)  
MEETING SECRETARIAT: [scientific.assist@ebri.it](mailto:scientific.assist@ebri.it)



**Encuentros  
CAJAL  
ITALY**

**NEUROSCIENCE-INSPIRED  
NEXT GENERATION AI**

**26 November 2024**

**ROME**

Sala Convegni - Consiglio Nazionale delle Ricerche CNR  
Via dei Marrucini



CON IL PATROCINIO DELLA

**REGIONE  
LAZIO**



# PROGRAMME

**9:30**

Registration

**10:00**

## WELCOME ADDRESSES

**Maria Chiara Carrozza**

*President, Italian National Research Council*

**Miguel Fernández-Palacios M.**

*Ambassador of Spain to the Republic of Italy*

**Antonino Cattaneo**

*President, European Brain Research Institute  
'Rita Levi-Montalcini'*

**Roberta Angelilli**

*Vice President, Lazio Region*

**10:20**

## KEYNOTE LECTURES

CHAIRS: **Ivan Arisi** and **Mara D'Onofrio**

*European Brain Research Institute  
'Rita Levi-Montalcini'*

### **FROM CAJAL'S CEREBRAL CORTEX TO CURRENT CORTICAL DYNAMICS: A LIVING LEGACY**

**Mavi Sanchez-Vives**

*Institut d'Investigacions Biomèdiques  
August Pi i Sunyer, Barcelona*

### **NEURONAL NETWORK MODELING - ESSENTIAL TOOLS AND THEIR LIMITATIONS**

**Hannah Monyer**

*European Brain Research Institute 'Rita Levi-Montalcini'; German Cancer Research Center, DKFZ*

### **MULTIPLEXED DECISION STRATEGIES IN THE BRAIN CAN BE INFERRED FROM MOUSE FACIAL EXPRESSIONS**

**Alfonso Renart**

*Champalimaud Centre for the Unknown, Lisbon*

### **A NEW PERSPECTIVE ON THE CONSEQUENCES OF BRAIN INJURY**

**Marcello Massimini**

*Università degli Studi di Milano*

**13:00**

End of session

**14:30**

## ROUNDTABLE

### **CHALLENGES IN CONNECTING AI AND NEUROSCIENCE**

CHAIR: **Antonino Cattaneo**

*European Brain Research Institute  
'Rita Levi-Montalcini'*

**Catalina Curceanu**

*Istituto Nazionale di Fisica Nucleare, Frascati*

**Stefano Ferraina**

*Sapienza Università di Roma*

**Giovanni Felici**

*Sapienza Istituto di Analisi dei Sistemi e Informatica  
'A. Ruberti', CNR, Rome*

**Marcello Massimini**

*Università degli Studi di Milano*

**Maurizio Mattia**

*Istituto Superiore di Sanità, Rome*

**Hannah Monyer**

*European Brain Research Institute  
'Rita Levi-Montalcini'; German Cancer Research  
Center, DKFZ*

**Pier Stanislao Paolucci**

*Istituto Nazionale di Fisica Nucleare, Roma*

**Alfonso Renart**

*Champalimaud Centre for the Unknown, Lisbon*

**Mavi Sanchez-Vives**

*Institut d'Investigacions Biomèdiques  
August Pi i Sunyer, Barcelona*

**16:30**

*Presentation of the Italian translation  
of Ramón y Cajal's book*

**Reglas y consejos sobre investigación  
científica (Los tónicos de la voluntad)  
Regole e consigli sulla ricerca scientifica  
(I tonici della volontà)**

**Angelo Sidoni** and **Marco Paone**

*Università degli Studi di Perugia*

**16:45**

### **RAMÓN Y CAJAL AND LEVI MONTALCINI: NEURONAL NETWORKS AND THEIR MAKING**

**Pietro Calissano**

*Co-Founder of the European Brain Research Institute  
'Rita Levi-Montalcini'*