

NAPLES 2023

27 • 28 • 29 SEPTEMBER

PRELIMINARY SCIENTIFIC PROGRAM



6th BRAINSTORMING RESEARCH ASSEMBLY
FOR YOUNG NEUROSCIENTISTS

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Simona Schiavi

University of Genoa (Italy)

MENTORS

Franca Esposito	University of Naples (Italy)
Lorenzo Marrucci	University of Naples (Italy)
Thomas C. Südhof	Nobel Laureate • Department of Molecular and Cellular Physiology, Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford (USA)
Antonio Uccelli	IRCCS San Martino Hospital, Genoa (Italy)

INVITED SPEAKERS

Martina Absinta	Institute of Experimental Neurology, Division of Neuroscience, Vita-Salute San Raffaele University and Hospital, Milan (Italy)
Varun Venkataramani	Universität Heidelberg, Neurological Clinic (Germany)
Severine Boillee	Paris Brain Institute - ICM, INSERM, Pitié-Salpêtrière Hospital, Paris (France)
Michael Khalil	Clinical Department of General Neurology, Medical University of Graz (Austria)
Richard Morris	Department of Neuroscience, The University of Edinburgh (UK)
Claudio Procaccini	Italian National Research Council (CNR), Institute Experimental Endocrinology and Oncology “Gaetano Salvatore” IEOS (Italy)
Michal Schwartz	Department of Neurobiology, Weizmann Institute of Science, Rehovot 7610001 (Israel)
Sebastian Sulis Sato	Scuola Normale Superiore di Pisa, Laboratory NEST (Italy)
Giuseppe Testa	University of Milan, Oncology and Hemato-oncology (Italy)




BRAYNIACS

Gianmarco Abbadessa	University of Campania “Luigi Vanvitelli”, Caserta (Italy)
Stefano Amoretti	University of Padova (Italy)
Vito Antonio Baldassarro	Department of Veterinary Medical Sciences, University of Bologna (Italy)
Marta Bottero	IRCCS San Martino Hospital, Genoa (Italy)
Samuele Negro	University of Padova (Italy)
Paola Pacifico	Scuola Normale Superiore, Pisa (Italy)
Gianmarco Pallavicini	Department of neuroscience “Rita Levi Montalcini”, University of Turin (Italy)
Marco Rasile	Humanitas University, Rozzano (Italy)
Gabriele Sansevero	Neuroscience Institute - National Research Council of Italy, Pisa (Italy); Fondazione Umberto Veronesi, Milan (Italy)
Giacomo Sferruzza	San Raffaele Scientific Institute, Milan (Italy)
Elisabetta Stanzani	Italian National Research Council, Milan (Italy); Humanitas Research Hospital, Rozzano (Italy)
Maria Velasco	Trinity College, Dublin (Ireland)

YOUNG EPILEPSY SECTION-ITALY, YES-ITALY, ILAE

Simona Balestrini	Department of Clinical and Experimental Epilepsy, UCL Queen Square Institute of Neurology, London (UK); Neuroscience Department, Children’s Hospital Meyer-University of Florence (Italy)
Giulia Battaglia	Neurologia universitaria, IRCCS Policlinico San Donato Milanese, Milano (Italy)
Luca De Palma	Rare and Complex Epilepsy Unit, Department of Neuroscience, Bambino Gesù Children’s Hospital IRCCS, Rome (Italy)
Lorenzo Ferri	Department of Biomedical and Neuromotor Sciences, University of Bologna (Italy)



STARTING GRANT COMMITTEE

Corrado Cali	Department of Neuroscience, University of Torino (Italy)
Myriam Catalano	«Sapienza» University of Rome (Italy)
Valerio Chiurchiù	CNR and IRCCS Santa Lucia Foundation, Rome (Italy)
Paola Infante	«Sapienza» University of Rome (Italy)
Nunzio Iraci	Dept. BIOMETEC, University of Catania (Italy)

LOCAL ORGANIZING COMMITTEE

soon available

ORGANIZING SECRETARIAT

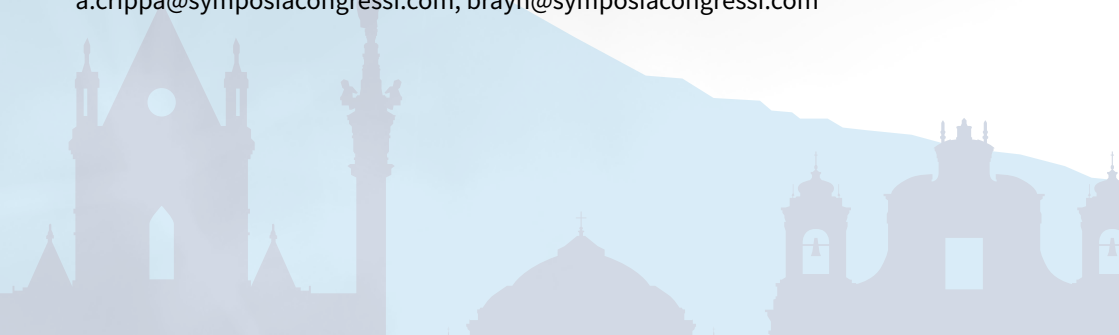
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BRAYN SCIENTIFIC SESSIONS

NEUROIMAGING exploits various techniques to image the structure, function, or physiology of the nervous system. Two main neuroimaging approaches exist: i) structural imaging, which evaluates the structure of the nervous system and allows the diagnosis of large-scale intracranial diseases (such as tumors, multiple sclerosis lesions, and stroke) and injuries (like traumatic brain injury); ii) functional imaging, which is used to diagnose metabolic diseases such as Alzheimer's disease, for neurological and cognitive psychology research, as well as for building brain-computer interfaces. The most commonly used techniques for neuroimaging are Computed Tomography (CT), Diffuse Optical Imaging (DOI), Event-Related Optical Signal (EROS), Magnetic Resonance Imaging (MRI), Arterial Spin Labeling (ASL), low to ultra-high frequency ultrasound with photoacoustics, Magnetoencephalography (MEG), Electroencephalography (EEG), Positron Emission Tomography (PET), Single-Photon Emission Computed Tomography (SPECT), and cranial or functional ultrasound imaging. In this session, we will discuss the use of these techniques, both alone and in combination, to investigate, detect, and understand various aspects of neurological diseases.

NEUROINFLAMMATION is the inflammatory response initiated in the central nervous system (CNS) by resident cells or triggered by infiltrating immune cells, which causes the neuronal dysfunctions observed in inflammatory and neurodegenerative disease of the CNS. The NI session mainly focuses on basic and clinical research in multiple sclerosis (MS), Neuromyelitis Optica Spectrum Disorder (NMOSD) and other inflammatory diseases of the CNS that have a significant impact on the lives of young adults. Although the scientific discoveries of recent decades have improved the therapeutic approaches used for the treatment of such pathologies, many questions still remain unanswered. The NI session aims to discuss the basic pathogenic mechanisms governing CNS inflammation, the role of immune system in CNS autoimmunity, and the importance of genetic and environmental factors in the development of neuroinflammatory diseases, with a patient-centered focus.


NEUROPHYSIOLOGY & NEURAL PLASTICITY. We will focus on studies addressing the function of the nervous system and of its components, and the capacity of the nervous system to modify itself, functionally and structurally, in response to experience and injury. All levels of function and plastic changes are included, from the membrane and cell to systems and behaviour. Experimental approaches include molecular, cellular and developmental neurobiology, functional neuroanatomy, neurochemistry, neuropharmacology, electrophysiology, and behavioural analysis, in *in vivo*, *ex-vivo* and *in vitro* models in invertebrate or vertebrate species, including humans.

NEURO-ONCOLOGY is an emerging field of investigation that studies nervous system tumors. As many of them can cause severe nervous system damage, neuro-oncology represents a trending research area in neuroscience, which may identify the molecular mechanisms involved in tumor pathogenesis. This would ultimately lead to the development of novel therapeutic approaches for the treatment of life-threatening diseases such as glioma, and medulloblastoma. These topics will be discussed in depth during the NO session.

EPILEPSY, NEURODEVELOPMENT & NEUROGENETICS are deeply interconnected fields. Human neurodevelopment is a dynamic and extensive process, beginning at the pre-natal stages, driven by genetic information, and influenced by many environmental factors. The alteration of this process at different levels can lead to neurodevelopmental and psychiatric disorders such as autism spectrum disorder, intellectual disability, and epilepsy. Epilepsy is one of the most common neurological diseases globally. Its etiologies cover a wide range, from genetics to trauma, auto-immunity, and tumors. Unfortunately, available therapeutics only treat the symptoms but not the root cause of the disease. This complexity has pushed epilepsy research to embrace many different fields of neuroscience, to discover the pathophysiological processes that cause and sustain seizures, and potential therapeutic targets. In this session we discuss how new insights from the fields of epilepsy research, developmental disorder and neurogenetics can improve our understanding of the human brain and contribute to novel therapeutic perspectives.

NEURODEGENERATION is a key aspect of a large number of diseases characterized by progressive damage of the nervous system that leads to irreversible neuronal death, such as Parkinson's disease (PD) and Alzheimer's disease (AD). PD is a slowly progressive syndrome that begins insidiously, gradually worsens in severity, and usually affects one side of the body before spreading to involve the other side. Rest tremor is often the first symptom recognized by the patient, but the illness sometimes begins with bradykinesia, and in some patients, tremor may never develop. AD is the most common type of dementia and it is an irreversible, neurodegenerative and progressive central nervous system disorder that slowly destroys memory and thinking skills, and, eventually, other mental abilities. Other examples of neurodegenerative diseases are tauopathies, narcolepsy, depression and psychiatric disorders. During the BraYn conference, we will be updated on the more recent advances in the field.

CLINICAL NEUROSCIENCE is a translational field in which neuroscience data and basic research are coupled with clinical neurology to better understand the neural underpinnings of nervous system disorders, and to improve their diagnosis and treatment. In this session, we encourage the submission of data with a clear translational significance and real-world clinical applications. We will discuss patient-related observations derived from experimental research, clinical research, and clinical trials focusing especially on the potential role and use of biomarkers in the clinical setting and on new treatments for neurological diseases. We also welcome works describing clinical cases (or case-series) that directly discuss the application of new therapies or novel biomarkers in a clinical population.



27 SEPTEMBER • Day 1

10:00 Registration

11:00 Opening Ceremony | **Giovanni Ferrara**

BRAYN STARTING GRANT SESSION

Chairpersons: C. Calì, V. Chiurchiù, N. Iraci, M. Catalano

11:30 **Francesca Fagiani** (Starting Grant 2022 Winner)

11:45 Lecture | **Invited Speaker**

12:15 Lunch box with Poster session 1

SESSION 1 • CLINICAL NEUROSCIENCE ORAL COMMUNICATIONS

Chairman: M. Tartaglia

14:00 Lecture | **Invited Speaker**

14:30 *Oral presentation*

14:45 *Oral presentation*

15:00 *Oral presentation*

15:15 *Oral presentation*



**SESSION 2 • NEUROINFLAMMATION
ORAL COMMUNICATIONS**

Chairpersons: S. Angiari, I. Prada

15:30 Lecture | **Invited Speaker**

16:00 *Oral presentation*

16:15 *Oral presentation*

16:30 **BraYn Educational Symposium**

16:45 **BraYn Educational Symposium**

17:00 *Oral presentation*

17:15 *Oral presentation*

17:30 Closing remarks



28 SEPTEMBER • Day 2

SESSION 3 • NEUROPHYSIOLOGY & NEURAL PLASTICITY ORAL COMMUNICATIONS

Chairwomen: E. Boda, R.C. Paolicelli, G. Calabrese

9:00 Lecture | **Invited Speaker**

9:30 *Oral presentation*

9:45 **BraYn Educational Symposium**

10:00 **BraYn Educational Symposium**

10:15 *Oral presentation*

10:30 *Oral presentation*

10:45 Lecture | **Invited Speaker**

11:30 Lunch box with Poster session 2

SESSION 4 • NEURO-ONCOLOGY ORAL COMMUNICATIONS

Chairpersons: G. D'Alessandro, E. Vannini, G. Pallavicini

13:30 Lecture | **Invited Speaker**

14:00 *Oral presentation*

14:15 **BraYn Educational Symposium**

14:30 *Oral presentation*

14:45 *Oral presentation*

**SESSION 5 • NEUROIMAGING
ORAL COMMUNICATIONS**

Chairpersons: F. Di Lorenzo, S. Schiavi

15:00 Lecture | **Invited Speaker**

15:15 *Oral presentation*

15:30 *Oral presentation*

15:45 **BraYn Educational Symposium**

16:00 **BraYn Educational Symposium**

16:15 Closing remarks

16:30 General assembly for members of the BraYn Association Ets

29 SEPTEMBER • Day 3

**SESSION 6 • NEURODEGENERATION
ORAL COMMUNICATIONS**

Chairpersons: G. Nardo, B. Bettegazzi, M. Medelin

9:00 Lecture | **Invited Speaker**

9:30 *Oral presentation*

9:45 *Oral presentation*

10:00 *Oral presentation*

10:15 **BraYn Educational Symposium**

10:30 *Oral presentation*

10:45 *Oral presentation*

11:00 **BraYn Educational Symposium**

11:15 Technical Talk

11:45 Lunch box with Poster Session 3

**SESSION 7 • EPILEPSY, BRAIN DEVELOPMENT & NEUROGENETICS
ORAL COMMUNICATIONS**

(curated by Young Epilepsy Section-Italy, YES-Italy, ILAE)

Chairpersons: G. Balagura, S. Balestrini, M. Rasile

13:45 Lecture | **Invited Speaker**

14:15 *Oral presentation*

14:30 *Oral presentation*

14:45 *Oral presentation*

15:00 Questions & Answers

15:15 Closing remarks • BraYn Awards (Best Oral and Poster Presentation and BraYn Starting Grant)



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