

08:00 – 08:45 **Opening Ceremony:** Plenary Hall
 Chairpersons: M. Memo – P. Calabresi
 Welcome by the Rector of the University of Brescia and local Authorities

08:45 – 10:15 **Symposium 1:** Plenary Hall
Neuroinformatics: an innovative approach to enquire AD neurodegeneration
 Chairpersons: E. D'Angelo – R. Ghidoni

IRCCS Italian Network of Neuroscience and Neurorehabilitation (RIN): the Virtual National Institutes
Fabrizio Tagliavini (*Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy*)
 Image based models for unravelling the heterogeneity of neurodegenerative disease
Daniel C. Alexander (*University College London, London, United Kingdom*)
 Big data collections and AI analysis: the neuGRID and GAAIN platforms
Alberto Redolfi (*IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy*)
 Deciphering the genetic component of Alzheimer's disease: potential implications in personalised medicine?
Jean-Charles Lambert (*Institut Pasteur de Lille, Université de Lille, Lille, France*)

08:45 – 10:15 **Symposium 2: Under40** Hall A
Insights into metabolic and inflammatory response of microglia and astrocytes in health and disease
 Chairpersons: E. Parmigiani - E. Vannini



Lactate metabolism in the control of microglial function
Rosa Chiara Paolicelli (*University of Lausanne, Lausanne, Switzerland*)
 Mitochondrial network dynamics in reactive astrocytes
Matteo Bergami (*CECAD Research Center, University Hospital Cologne, Germany*)
 Environmental stimuli shape microglial plasticity in glioma
Stefano Garofalo (*La Sapienza University of Rome, Rome, Italy*)
 Development of organ-specific therapies for brain metastasis based on altered molecular pathways in reactive astrocytes
Neibla Priego (*Spanish National Cancer Research Centre CNIO, Madrid, Spain*)

08:45 – 10:15 **Symposium 3:** Hall B
Functions of primate prefrontal nodes in complex social behaviors
 Chairpersons: O. Dal Monte – L. Ferrucci

Longitudinal effects of early social adversity on brain and behavioural development in rhesus macaques
Holly Rayson (*Claude Bernard University Lyon 1, Bron, France*)
 Role of Monkey prefrontal and premotor cortices in guiding behavior based on social information
Alfonso Gravante (*University of Parma, Parma, Italy*)
 Frontal pole activity of macaque monkeys in a social interactive task
Simon Nougaret (*Sapienza University of Rome, Rome, Italy*)
 Widespread and interactive social gaze monitoring in the primate brain
Olga del Monte (*University of Turin, Turin, Italy and Yale University, New Haven, USA*)

10:30 – 12:00 **Symposium 4:** Plenary Hall
The thin boundary between brain and periphery in Alzheimer and Parkinson's disease: new targets and therapeutic strategies
 Chairpersons: C. Matrone – B. Borroni

Peripheral immune changes during Parkinson's disease
Marina Romero Ramos (*Aarhus University, Aarhus, Denmark*)
 Active and passive immunotherapy with a novel epitope against N-truncated amyloid-peptides in preclinical mouse models
Thomas A. Bayer (*Georg August University, Göttingen, Germany*)
 Targeting increased levels of APP Tyr682 phosphorylation in Alzheimer's disease patients: what are peripheral cells telling the brain?
Carmela Matrone (*University of Naples Federico II, Naples, Italy*)
 Circulating biomarkers in neurodegenerative diseases, a flow cytometry approach
Peppino Mirabelli (*IRCCS SDN, Naples, Italy*)

10:30 – 12:00 **Symposium 5: Under40** Hall A
The brain extracellular matrix – friend or foe? Current discussion over the role of the extracellular matrix in synaptic plasticity and psychiatric disorders
 Chairpersons: G. Chelini – D. Carulli



Perineuronal net interactions in modulating adult plasticity and cognitive function
Iliaria Bertocchi (*University of Turin, Turin, Italy*)
 Synaptic Remodeling Depends on Signaling between Serotonin Receptors and the Extracellular Matrix
Monika Bijata (*Nencki Institute of Experimental Biology of the Polish Academy of Science, Warsaw, Poland*)
 Perineuronal net and Parvalbumin-expressing interneurons are rescued by the combination of antioxidants and environmental enrichment through MMP9/RAGE mechanism: relevance for schizophrenia
Daniella Dwir (*Lausanne University Hospital CHUV, Lausanne, Switzerland*)
 6-Sulfated Chondroitin Sulfate Contributes to Activity-dependent Clustered Plasticity in the Mouse Barrel Cortex
Gabriele Chelini (*University of Mississippi Medical Center, Jackson, USA*)

10:30 – 12:00	Symposium 6: New perspectives for therapeutic intervention in neurodegeneration Chairpersons: F. Gardoni – E. De Leonibus	Hall B
	VEGFD-based therapies to preserve neuronal structure and function from degeneration Daniela Mauceri (<i>Neurobiology Heidelberg University, Heidelberg, Germany</i>) CAP2 orchestrate actin cytoskeleton in synaptic plasticity and in Alzheimer's disease Silvia Pelucchi (<i>Leopold-Franzens-University Innsbruck, Austria</i>) Autophagy activation as a therapeutic strategy for proteinopathy-related cognitive impairment Elvira De Leonibus (<i>Institute of Biochemistry and Cellular Biology IBBC, Italy</i>) Anti-GluA3 autoantibodies in frontotemporal dementia induce behavioral dysfunctions dendritic spine alterations Diego Scheggia (<i>University of Milan, Milan, Italy</i>)	
12:00 – 13:00	Plenary Lecture: Protein Synthesis at Neuronal Synapses Erin Schuman (<i>Department of Synaptic Plasticity, Max Planck Institute for Brain Research, Frankfurt, Germany</i>) Chairperson: M.V. Catania	Plenary Hall
13:00 – 14:30	Symposium 7: Synergism of non-neuronal brain-resident cells in central nervous system plasticity: role of transcriptional and transductional factors Chairpersons: L. Annunziato – D. Sun	Plenary Hall
	Stimulating microglial glucose metabolism and phagocytosis for post-stroke remyelination and cognitive function recovery Dandan Sun (<i>University of Pittsburgh, Pittsburgh, Pennsylvania</i>) Pathfinding During Direct Lineage Reprogramming - Omnes Viae Neuronum Ducunt Marisa Karow (<i>Friedrich-Alexander-University Erlangen-Nürnberg, Erlangen, Germany</i>) Astrocyte-microglia crosstalk promotes Ascl1-dependent post-ischemic astrocyte plasticity through Na ⁺ /Ca ²⁺ exchanger 1 Antonella Casamassa (<i>School of Medicine Federico II University of Naples, Naples, Italy</i>) Modulating glutamate transmission reduces the reactive astrocyte phenotype in amyotrophic lateral sclerosis Carola Torazza (<i>University of Genoa, Genoa, Italy</i>)	
13:00 – 14:30	Symposium 8: Under40 The complexity of proteinopathies in neurodegenerative diseases: a highlight of new models, mechanisms and possible therapies Chairpersons: L. Tapella – F. Bono	Hall A
	 Proteomics analysis links alterations of bioenergetics, mitochondria-ER interaction and proteostasis in hippocampal astrocytes from 3xTg-AD mice Laura Tapella (<i>University of Piemonte Orientale, Novara, Italy</i>) The small GTPase RIT2 acts on the autophagy-lysosome pathway and modulates alpha-synuclein accumulation Julia Obergasteiger (<i>Université Laval, Québec, Canada</i>) Mutant prion proteins increase calcium permeability of AMPA receptors, exacerbating excitotoxicity Elena Restelli (<i>Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy</i>) Antibodies-based therapy to overcome intracellular TDP-43 proteinopathy Silvia Pozzi (<i>CERVO Brain Research Centre, Québec, Canada</i>)	
13:00 – 14:30	Symposium 9: Novel pathological pathways and therapeutic perspectives for neurodegenerative proteinopathies Chairpersons: A. Bellucci – L. Bubacco	Hall B
	Towards dopamine reinnervation of the dorsal striatum from ventral striatum axons David Sulzer (<i>Columbia University, New York, USA</i>) Targeting protein aggregation and the interaction of misfolded protein oligomers with biological membranes. The lesson from squalamine and trodusquemine: from the biophysics to human clinical trials Fabrizio Chiti (<i>University of Florence, Florence, Italy</i>) DOPAL initiates αSynuclein-mediated neuronal dyshomeostasis leading to enhanced vulnerability in Parkinson's disease Luigi Bubacco (<i>University of Padova, Padua, Italy</i>) Drug-based synapsin III recruitment allows recovery of functional alpha-synuclein at dopaminergic synapses Francesca Longhena (<i>University of Brescia, Brescia, Italy</i>)	
14:30 – 15:30	Plenary Lecture: Extracellular vesicles as stress signals: Identifying novel mechanisms of neurodevelopmental programming Tracy Bale (<i>University of Maryland School of Medicine, Baltimore, USA</i>) Chairperson: M.Pizzi	Plenary Hall
15:30 – 17:00	Symposium 10: Molecular mechanisms in Treatment-Resistant Depression: relevance for neurobiological and translational approaches Chairpersons: F. Nicoletti – G. Collo	Plenary Hall
	Systemic inflammation in Treatment Resistant Depression: pathogenetic mechanism and target for treatment Francesco Benedetti (<i>University Vita-Salute San Raffaele, Milan, Italy</i>) Dendritic remodeling of hippocampal pyramidal neurons, induced by chronic stress and fast-acting antidepressant ketamine, involves miR-9-5p Jessica Mingardi (<i>University of Brescia, Brescia, Italy</i>) Epigenetic mechanisms of glutamatergic function for personalized interventions in neuropsychiatric disorders Carla Nasca (<i>The Rockefeller University, New York, USA</i>) Structural Plasticity Induced by Ketamine in Human Dopaminergic Neurons as Mechanism Relevant for Treatment-Resistant Depression Ginetta Collo (<i>University of Brescia, Brescia, Italy</i>)	

15:30 – 17:00	Symposium 11: Neuronal and non-neuronal mechanisms of neurodegeneration in motor neuron diseases Chairpersons: G. Bonanno – A. Poletti	Hall A
	An altered extracellular vesicle protein cargo drives the (mis)communication between astrocytes and neurons in ALS Manuela Basso (<i>University of Trento, Trento, Italy</i>) Spinal muscular atrophy, more than a motor neuron disease: the contribution of neuromuscular junction dysfunctions to disease progression Marina Boido (<i>University of Turin, Turin, Italy</i>) In-vivo and in-vitro evidence supporting the role of mGlu5 receptor as a key regulator of glutamate downstream effects in ALS Marco Milanese (<i>University of Genoa, Genoa, Italy</i>) Activation of chaperone-assisted selective autophagy counteracts misfolded protein accumulation in motoneuron diseases Angelo Poletti (<i>University of Milan, Milan, Italy</i>)	
15:30 – 17:00	Symposium 12: The many flavors of stress: antecedents and outcomes Chairpersons: M. Popoli – V. Carola	Hall B
	Diverse early-life stress experiences result in differentially altered DNA methylation pattern in the brain and immune system Valeria Carola (<i>La Sapienza University of Rome, Rome, Italy</i>) Different short- and long-term consequences to sub-chronic stress exposure in male and female BDNF knock-in Val66Met mice Alessandro Ieraci (<i>University of Milan, Milan, Italy</i>) Impact of sub-chronic Stress on Thrombosis Silvia S. Barbieri (<i>Centro Cardiologico Monzino IRCCS, Milan, Italy</i>) The arousal-based individual screening model: a translational approach for the study of PTSD Sebastiano A. Torrì (<i>University of Catania, Catania, Italy</i>)	
17:00 – 18:00	Plenary Lecture: The Biological Bases of Long-Term Memory Cristina Alberini (<i>Center for Neural Science, New York University, New York, USA</i>) Chairperson: C. Missale	Plenary Hall
18:00 – 19:30	Symposium 13: Frontiers in the future of brain aging: from adaptative responses to pathological outcomes Chairpersons: D. Uberti – C. Lanni	Plenary Hall
	Derangements in neurotransmission and their correlate in behavioural alterations during aging: rescue from nutraceuticals and nutrition supplements Massimo Grilli (<i>University of Genoa, Genoa, Italy</i>) Transfer of painful sensitivity by gut microbiota transplant: pathophysiological and therapeutic gut-brain connections Lorenzo Di Cesare Mannelli (<i>University of Florence, Florence, Italy</i>) Differential expression of Perilipins in brain areas during aging and neuro-degenerative diseases Stefano Salvioli (<i>University of Bologna, Bologna, Italy</i>) A structure-based approach to model pharmacological interventions: new molecular entities with anti-inflammatory and anti-aggregating profiles Cristina Lanni (<i>University of Pavia, Pavia, Italy</i>)	
18:00 – 19:30	Symposium 14: Cues and circuits driving reproduction in mice Chairpersons: S. Bovetti – P. Peretto	Hall A
	"I like the way you sing" – perception of acoustic cues in mouse courtship communication Catherine Perrodin (<i>University College London, London, United Kingdom</i>) Functions of sexual signals in wild house mice Dustin Penn (<i>University of Veterinary Medicine, Vienna, Austria</i>) Deciphering the role of gonadotropin-releasing hormone (GnRH) neurons mediating socio-sexual olfactory preference Mauro Batista da Silva (<i>University of Lille, Lille, France</i>) Neural plasticity in the Accessory olfactory bulb and its role in controlling reproduction in the mouse Paolo Peretto (<i>University of Torino, Orbassano, Italy</i>)	
18:00 – 19:30	Symposium 15: Nanomaterials and nanoimaging: insight on neural cell physiology and pathology at the nanoscale Chairpersons: I. Tonazzini – V. Benfenati	Hall B
	Study of neuronal guidance in UBE3A-related neurodevelopmental disorders models by nano/micro-structured platforms Iliaria Tonazzini (<i>Ist. Nanoscienze-CNR, National Enterprise for nanoScience and nanoTechnology, Pisa, Italy</i>) Light-sensitive nano and microstructures based on conjugated polymers: optical control of cell fate and physiology Maria Rosa Antognazza (<i>Center for Nano Science and Technology, IIT@Polimi, Milan, Italy</i>) Extremely low forces generated by magnetic nanoparticles induce axon outgrowth and neural maturation Vittoria Raffa (<i>University of Pisa, Pisa, Italy</i>) Super-resolution microscopy analysis of Aquaporin-4 protein aggregates and actin cytoskeleton in glial cells Grazia Paola Nicchia (<i>University of Bari, Bari, Italy</i>)	
19:30 – 20:30	Plenary Lecture: The role of limbic system dysfunction in chronic pain Marco Martina (<i>Northwestern University, Chicago, USA</i>) Chairperson: A. Vercelli	Plenary Hall

08:00 – 09:30	Symposium 16: Neurodevelopmental disorders: from molecular impairments to new therapeutic opportunities Chairpersons: M. Fossati – D. Pozzi	Plenary Hall
	Molecular determinants of excitation/inhibition coordination Cécile Charrier (<i>PSL University, Paris, France</i>) Immune-synaptopathies: how the immune system affects synaptic formation Davide Pozzi (<i>Humanitas University, Milan, Italy</i>) Studying Cortical development through the lens of human disorders Gaia Novarino (<i>Institute of Science and Technology – IST, Austria</i>) New therapeutic approaches for neurodevelopmental disorders Laura Cancedda (<i>Istituto Italiano di Tecnologia – IIT, Genoa, Italy</i>)	
08:00 – 09:30	Symposium 17: Mechanisms of maladaptive plasticity in stress-based models of psychiatric disorders Chairpersons: A. Barbon – L. Musazzi	Hall A
	Pre-synaptic and peri-synaptic maladaptive responses induced by acute stress in rat prefrontal cortex Tiziana Bonifacino (<i>University of Genoa, Genoa, Italy</i>) Acute ketamine restores glutamatergic alterations and dendritic atrophy in the prefrontal cortex, together with improving fear memory extinction, in a rat model of PTSD Laura Musazzi (<i>University of Milano-Bicocca, Monza, Italy</i>) Effects of combined administration of fluoxetine and zinc in a model of chronic restraint stress in mice Paulina Mistzak (<i>Jagiellonian University Medical College, Kraków, Poland</i>) Gene expression response of cortical oligodendrocytes to chronic psychosocial stress in an anxious and non-anxious mouse strain Iiris Hovatta (<i>University of Helsinki, Helsinki, Finland</i>)	
08:00 – 09:30	Oral Communications: Chairpersons: M. Memo – M. Pizzi	Hall B
	Hydroxychloroquine treatment and immune response in Aicardi–Goutières syndrome patients carrying RNASEH2 mutations Daisy Sproviero (<i>IRCCS Mondino Foundation, Pavia, Italy</i>) Nutritional overload worsens EAE severity by promoting synaptic damage and neuroinflammation Alessandra Musella (<i>University of Rome San Raffaele, Rome, Italy</i>) Neural progenitor cell-astrocyte crosstalk in adult hippocampal neurogenesis Valeria Bortolotto (<i>University of Piemonte Orientale, Italy</i>) Clusterin limits the uptake of α -synuclein aggregates by astrocytes: implications for Parkinson's disease Isabella Russo (<i>University of Brescia, Brescia, Italy</i>) Seril-18, a new synthetic molecule, inhibits α -synuclein aggregation in an experimental model of Parkinson's disease Marika Cordaro (<i>University of Messina, Messina, Italy</i>) Does Parkinson's disease begin in the gut? The progression of gut pathology in the c-rel/- mouse model of Parkinson's disease Edoardo Parrella (<i>University of Brescia, Brescia, Italy</i>) Balancing mitophagy and mitochondrial biogenesis to maintain energy metabolism is required for the neuroprotection induced by ischemic brain preconditioning Maria José Sisalli (<i>University of Naples "Federico II", Naples, Italy</i>)	
09:30 – 10:30	Plenary Lecture: The 25th hour in the life of a stressed synapse Maurizio Popoli (<i>University of Milan, Milan, Italy</i>) Chairperson: P. Fadda	Plenary Hall
10:30 – 12:00	Symposium 18: Dopamine and disease: new insights and therapeutic perspectives Chairpersons: S. Espinoza – M. Gennarelli	Plenary Hall
	Dopamine Transporter Knock-out Rats (DAT KO) an innovative animal model for dopamine related diseases Damiana Leo (<i>University of Mons, Mons, Belgium</i>) Dopamine-dependent HDAC regulation and its role in postsynaptic neurodegeneration Stefano Espinoza (<i>Istituto Italiano di Tecnologia, Genoa, Italy</i>) Cell reprogramming approaches for the generation of dopaminergic in vitro neural systems Massimiliano Caiazzo (<i>Utrecht University, Utrecht, The Netherlands</i>) The role of dopamine receptors and their alterations in neurodegeneration Federica Bono (<i>University of Brescia, Brescia, Italy</i>)	

10:30 – 12:00

Symposium 19: Under40

Hall A

**The inflamed brain in neurological diseases: moving from hypothesis to treatment**Chairpersons: **I. Paterniti – A. Romano**

Vitamin D deficiency induces chronic pain and microglia phenotypic changes in mice

Serena Boccella (*University of Campania "Luigi Vanvitelli", Naples, Italy*)

Factors that influences the neuroinflammatory effects of 3,4-methylenedioxymethamphetamine (MDMA) administration during adolescence and adulthood

Giulia Costa (*University of Cagliari, Cagliari, Italy*)

The glutamatergic synapse: a chat room for amyloid-beta peptide and the nucleus

Laura D'Andrea (*University of Milan, Milan, Italy*)

Unravelling the complex role of neuroinflammation in Alzheimer's disease: preclinical evidence using palmitoylethanolamide

Marta Valenza (*Sapienza University of Rome, Rome, Italy*)

10:30 – 12:00

Symposium 20:

Hall B

Innovative technologies to tackle old issues in neurodegenerative diseases of the retinaChairpersons: **J.F. Maya-Vetencourt – F. Benfenati**

Visual restoration by a photovoltaic retinal prosthesis and optogenetic therapy

Serge Picaud (*Vision Institute, Paris, France*)

Inducible human photoreceptors for research, development and therapy

Marta Zuzic (*Technical University Dresden, Dresden, Germany*)

OTX2 in eye physiology and physiopathology: a non-cell autonomous vision

Ken Moya (*College de France, Paris, France*)

Subretinally injected semiconducting polymer nanoparticles rescue vision in a rat model of retinal dystrophy

José Fernando Maya-Vetencourt (*University of Pisa, Pisa, Italy*)

12:00 - 13:00

Poster Session

13:00 – 14:30

Symposium 21:

Plenary Hall

Clinical applications for cannabidiol: evidence from preclinical studiesChairpersons: **D. E. Pellegrini-Giampietro – S. Sigala**

Computational tools empower the discovery of a novel CBD profile of target interactions in neurodegeneration

Giovanni Ribaudò (*University of Brescia, Brescia, Italy*)

Cannabidiol modulates human polymorphonuclear leukocyte functions: experimental evidence and clinical implications

Franca Marino (*University of Insubria, Varese, Italy*)

Studies with cannabidiol in vitro: implications for cerebral ischemia and epilepsy

Elisa Landucci (*University of Florence, Florence, Italy*)

Cannabidiol and psychiatric disorders: therapeutic insights from preclinical evidence

Maria Scherma (*University of Cagliari, Cagliari, Italy*)

13:00 – 14:30

Symposium 22: Under40

Hall A

**Key factors in brain morphogenesis during development**Chairpersons: **G. Pallavicini – G. Favero**

Molecular dissection of cell division in the human developing brain

Amanda Moccia (*The University of Michigan Medical School, Ann Arbor, USA*)

Genotoxic stress and TP53 activation in neural progenitors lead to microcephaly syndrome

Gianmarco Pallavicini (*University of Turin, Turin, Italy*)

Dentate gyrus development requires a cortical hem-derived astrocytic scaffold

Alessia Caramello (*The Francis Crick Institute, London, United Kingdom*)

Intrinsic genetic control of corticopontine topography by cortical arealization gene Nr2f1

Chiara Tocco (*Côte d'Azur University, Nice, France*)

13:00 – 14:30

Symposium 23:

Hall B

Emerging preclinical and clinical approaches in brain ischemia

Joint Symposium SINS-SIN

Chairpersons: **P. Calabresi – C. Ferrarese**

Morphological and functional characterization of brain resident macrophages in murine models of ischemic stroke

Joe Kelk (*Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy*)

Role of miRNAs in the stroke protection associated to remote limb postconditioning

Antonio Vinciguerra (*Polytechnic University of Marche, Ancona, Italy*)

Artificial intelligence and stroke

Mauro Monforte (*Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy*)

Head positioning and collaterals in acute ischemic stroke

Susanna Diamanti (*University of Milano-Bicocca, ASST-Monza, Monza, Italy*)

14:30 – 15:30

Plenary Lecture:

Plenary Hall

Sleep and synaptic plasticity**Chiara Cirelli** (*University of Wisconsin-Madison, Wisconsin, USA*)

Chairperson: M. Morelli

15:30 – 17:00	Symposium 24: Sex and Gender in Neuroscience: toward a bridging Chairpersons: M. Pizzi – F. Blandini	Plenary Hall
	Neuromorphology of Gender: old and new contributions for the study of brain sex differences Giancarlo Panzica (<i>University of Turin, Turin, Italy</i>) Sexual differentiation of microglia in physiology and disease Alessandro Villa (<i>University of Milan, Milan, Italy</i>) Of mice, men and women: impact of sex differences on brain and behavior in health and disease Paola Palanza (<i>University of Parma, Parma, Italy</i>) Sex and gender brain differences using advanced neuroimaging techniques Daniela Perani (<i>Vita-Salute San Raffaele University, Milan, Italy</i>)	
15:30 – 17:00	Symposium 25: Under40 Probing brain networks through neuroimaging and neuro-manipulation in behaving animals Chairpersons: R. Mazziotti – M. Cambiaghi	Hall A
	 Differential relation between neuronal and behavioural discrimination during hippocampal memory encoding Manuela Allegra (<i>Institut Pasteur, Paris, France</i>) Optogenetic dissection of the neuronal circuits underlying the encoding of sensory information in the mouse cortex Dania Vecchia (<i>Istituto Italiano di Tecnologia, Genoa, Italy</i>) Restoration of motor-evoked cortical activity is a distinguishing feature of the most effective rehabilitation therapy after stroke Anna Letizia Allegra Mascaro (<i>Neuroscience Institute, National Research Council, Pisa, Italy</i>) Translational aspects of non-invasive brain stimulation techniques to modulate plasticity and behaviour Marco Cambiaghi (<i>University of Verona, Verona, Italy</i>)	
15:30 – 17:00	Symposium 26: Modeling the early phase of PD: from genetic models to alpha synuclein aggregation Chairpersons: A. Tozzi – M. Sciaccaluga	Hall B
	Longitudinal investigations of genetically faithful PD models to identify early dysfunction Dayne Beccano-Kelly (<i>Cardiff University, Cardiff, United Kingdom</i>) Bidirectional alterations of nigrostriatal circuit underlie early synaptic and motor dysfunctions induced by α -synuclein Miriam Sciaccaluga (<i>University of Perugia, Perugia, Italy</i>) Dissecting the impact of LRRK2 PD mutations at the presynaptic site Giovanni Piccoli (<i>University of Trento, Trento, Italy</i>) Lysosome biology in Parkinson's disease: mechanisms for neuroprotection Mattia Volta (<i>European Academy of Bolzano EURAC, Bolzen, Italy</i>)	
17:00 – 18:00	Plenary Lecture: Modeling neurodevelopmental disorders Flora Vaccarino (<i>Yale School of Medicine, New Haven, USA</i>) Chairperson: T. Pizzorusso	Plenary Hall
18:00 – 19:30	Symposium 27: Neuroplasticity and sensory experience /deprivation Chairpersons: E. Fazzi – A. Vita	Plenary Hall
	Neuroplasticity and the visual system: the impact of ocular and brain based visual impairment Lotfi Merabet (<i>Harvard Medical School - Boston - USA</i>) Musical memories in newborns Petra Huppi (<i>University of Geneva, Geneva, Switzerland</i>) Neuronal correlates of affective touch in early infancy Rosario Montiroso - Eleonora Mascheroni (<i>Scientific Institute IRCCS "Eugenio Medea", Lecco, Italy</i>) Early visual training and environmental adaptation for infants with visual impairment Elisa Fazzi (<i>University of Brescia, Brescia, Italy</i>)	
18:00 – 19:30	Symposium 28: Under40 Exploring the behavioral signature of abnormal brain endocannabinoid signaling Chairpersons: A. Manduca – M. Morena	Hall A
	 Targeting the epigenome to normalize motivational disturbances after prenatal THC exposure Anissa Bara (<i>Mount Sinai Hospital, New York, USA</i>) Characterizing 'the munchies'; effects of tetrahydrocannabinol (THC) vapour inhalation on satiety and food preference in rats Catherine Hume (<i>University of Calgary, Alberta, Canada</i>) Neuroinflammation Drives Changes in Endocannabinoids in the Amygdala Which Contribute to Anxiety-Like Behaviour in a Rat Model of Colitis Haley A. Vecchiarelli (<i>University of Victoria, Victoria, Canada</i>) Endocannabinoid signaling deficiency drives emotional and cognitive comorbidities in epilepsy Roberto Colangeli (<i>Polytechnic University of Marche, Ancona, Italy</i>)	

18:00 – 19:30

Symposium 29:

Mechanisms regulating white matter function, dysfunction and repair: focus on oligodendrocytes and microglia

Chairpersons: **F. Boscia – M. Grilli**

Hall B

Citron-kinase deletion unveils inherent molecular and functional heterogeneity in dorsal and ventral oligodendrocyte progenitor cells of the mouse forebrain

Enrica Boda (*University of Turin, Turin, Italy*)

The “Na⁺/Ca²⁺” exchanger NCX3 in oligodendrocytes: a potential target for white matter repair

Francesca Boscia (*University of Naples “Federico II”, Naples, Italy*)

The immune-inflammatory response of oligodendrocytes during neuroinflammation and white matter injury: the role of TLR3 activation

Marta Boccazzi (*University of Paris, Paris, France*)

TREM2-dependent lipid droplet biogenesis in phagocytes is required for remyelination in the central nervous system

Ludovico Cantuti-Castelvetri (*Technical University of Munich, Munich, Germany*)

19:30 – 20:30

Plenary Lecture:

Synaptic dysfunction in basal ganglia disorders

D. James Surmeier (*Northwestern University, Evanston, USA*)

Chairperson: P. Calabresi

Plenary Hall

08:00 – 09:30	Symposium 30: Glial cells: savers or slayers in brain disorders? Chairpersons: S. Ceruti – E. Coppi	Plenary Hall
	Microglial vesicles as multimodal mediators of myelin repair and brain recovery after stroke Marta Fumagalli (<i>University of Milan, Milan, Italy</i>) Adenosine A2B receptors interact with sphingosine-1-phosphate signalling to modulate oligodendrocyte maturation: towards new targets for remyelination in multiple sclerosis Elisabetta Coppi (<i>University of Florence, Florence, Italy</i>) Brain resident microglia and infiltrating macrophages: how the ischemic environment influences their recruitment, activation and function Stefano Fumagalli (<i>Istituto di Ricerche Farmacologiche Mario Negri, Milan, Italy</i>) MED1/BDNF/TrkB pathway is involved in thalamic hemorrhage-induced pain and depression by regulating microglia Livio Luongo (<i>University of Campania "Luigi Vanvitelli", Naples, Italy</i>)	
08:00 – 09:30	Symposium 31: Exploiting novel mechanisms for neuroprotection and neuroregeneration in acute brain injuries Chairpersons: M.G. De Simoni – S. Amoroso	Hall A
	The lectin pathway of complement activation: a novel pharmacological target for traumatic brain injury Domenico Mercurio (<i>Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy</i>) Neurogenesis activation by ischemic preconditioning in neonatal and adult models of hypoxic-ischemic insult Ornella Cuomo (<i>University of Naples Federico II, Naples, Italy</i>) Exploring the role of the immune system in ischemic tolerance triggered by conditioning stimuli Diana Amantea (<i>University of Calabria, Rende, Italy</i>) Contributions of NCX and EAAT transporters to cell energy balance and survival in neurodegenerative disorders: opportunities and challenges for therapeutic interventions Vincenzo Lariccia (<i>Polytechnic University of Marche, Ancona, Italy</i>)	
08:00 – 09:30	Oral Communications: Chairpersons: M. Pizzi – M. Memo	Hall B
	Chronic mild stress occludes dopamine-dependent synaptic plasticity in the medial pfc and alters pfc to basolateral amygdala synaptic drive Jacopo Lamanna (<i>Vita-Salute San Raffaele University, Milan, Italy</i>) Activity-based anorexia reorganizes the cortical glutamatergic synapse and impairs temporal memory Francesca Mottarlini (<i>University of Milan, Milan, Italy</i>) Ethanol neurotoxicity is mediated by changes in AMPA receptor expression, surface localization and functional properties Elisabetta Gerace (<i>University of Florence, Florence, Italy</i>) IGF-2 receptor in the auditory cortex improves the precision of recent fear memories and maintains detailed remote fear memories over time Giulia Concina (<i>University of Turin, Turin, Italy</i>) The first-line antidiabetic drug Metformin improves the impaired cognitive flexibility in a female mouse model of Rett syndrome Chiara Urbinati (<i>Center for Behavioral Sciences and Mental Health, Istituto Superiore di Sanità, Rome, Italy</i>) Brief changes in nutritional lifestyle can trigger reversible region- and age-specific effects in DCX+ hippocampal neuroblasts in mice Fausto Chiazza (<i>University of Piemonte Orientale, Italy</i>) Imaging the mouse developing auditory cortex Chiara La Rosa (<i>University of Turin, Turin, Italy</i>) Detection of SARS-CoV-2 genome and whole transcriptome sequencing in Frontal Cortex of COVID-19 patients Stella Gagliardi (<i>IRCCS Mondino Foundation, Pavia, Italy</i>)	
09:30 – 10:30	Plenary Lecture: From a new brain mechanism regulating CB1 hyperactivity to a multipurpose new pharmacological class: the CB1-SSi. Pier Vincenzo Piazza (<i>INSERM u862, University of Bordeaux, Bordeaux, France</i>) Chairperson: A. Usiello	Plenary Hall
10:30 – 12:00	Symposium 32: Ultrasonic vocalizations in rodents: relevance for ethologic and pharmacologic studies Chairpersons: S. A. Bonini – N. Simola	Plenary Hall
	USVs analysis in murine models of neurodevelopmental disorders Marika Premoli (<i>University of Brescia, Brescia, Italy</i>) Use of 50-kHz ultrasonic vocalizations to measure the affective properties of dopaminomimetic drugs in parkinsonian rats Nicola Simola (<i>University of Cagliari, Cagliari, Italy</i>) Ultrasonic vocalizations as a tool to assess the validity of mouse models of neurodevelopmental disorders Susanna Pietropaolo (<i>University of Bordeaux, Bordeaux, France</i>) Studying socio-affective communication deficits in rodent models for neuropsychiatric disorders through playback studies Markus Wöhr (<i>KU Leuven, Leuven, Belgium</i>)	


10:30 – 12:00	Symposium 33: New insights into the mechanisms of Parkinson's disease: understanding early pathological changes in striatal physiology to prevent therapeutic complications Chairpersons: B. Picconi – V. Ghiglieri	Hall A
	Mechanisms of striatal cell signalling in the context of Parkinson's and Huntington's Disease Riccardo Brambilla (<i>Cardiff University, Cardiff, United Kingdom</i>) Exercise-based rescue strategies in alpha-synuclein induced early experimental parkinsonism Federica Campanelli (<i>Università Cattolica del Sacro Cuore, Rome, Italy</i>) Effects of theta-burst stimulation on bidirectional striatal synaptic plasticity in models of Parkinson's disease and L-Dopa-induced dyskinesia Veronica Ghiglieri (<i>Università Telematica San Raffaele, Rome, Italy</i>) Modulating L-DOPA-induced striatal neuroinflammation to prevent dyskinesia in Parkinson's disease Anna Rosa Carta (<i>University of Cagliari, Cagliari, Italy</i>)	


10:30 – 12:00	Symposium 34: The role of neuroscience in psychiatry Chairpersons: A. Fiorillo – A. Tortorella	Joint Symposium SINS-SIPB Hall B
	Translational pharmacology in affective disorders: focus on depression Filippo Caraci (<i>University of Catania, Catania, Italy</i>) The social determinants of brain and mental health Sophia Frangou (<i>Icahn School of Medicine, Mount Sinai, New York, USA</i>) Selecting the right treatment in clinical decision making: neurobiological insights Mirko Manchia (<i>University of Cagliari, Cagliari, Italy</i>) Neuropsychology of aggression: single dose effects of catecholaminergic drugs on specific functions Alessandro Zuddas (<i>University of Cagliari, Cagliari, Italy</i>)	

12:00 – 13:00	Poster Session	
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13:00 – 14:00	Plenary Lecture: Innate and adaptive immunity in stroke and dementia: challenges and opportunities Costantino Iadecola (<i>Weill Cornell Medicine, NYC, USA</i>) Chairperson: G. Pignataro	Plenary Hall
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14:00 – 15:30	Symposium 35: Neuronal Autophagy in Health and Disease Chairpersons: A. Fassio – A. Fanzani	Plenary Hall
	The interplay of autophagy and synapse function Vassiliki Nikolettou (<i>University of Lausanne, Lausanne, Switzerland</i>) Impairment of lysosomal functions and autophagy in polyglutamine diseases Paola Rusmini (<i>University of Milan, Milan, Italy</i>) Protein Aggregation and Dysfunction of Autophagy-Lysosomal Pathway: A Vicious Cycle in Lysosomal Storage Diseases Alessandro Fraldi (<i>University of Naples "Federico II", Naples, Italy</i>) Role of autophagy/lysosomal genes in neurodevelopmental encephalopathy Anna Fassio (<i>University of Genoa, Genoa, Italy</i>)	

14:00 – 15:30	Symposium 36: Under40 Proteinopathies in neurodegenerative diseases Chairpersons: F. Moda – G. Bellomo	Hall A
	 Applications of the RT-QuIC assay for detection and quantification of proteopathic seeds in CSF and brain tissues from Parkinson's disease and Lewy body dementia patients Ankit Srivastava (<i>National Institute of Allergy and Infectious Diseases, Hamilton, USA</i>) International cross-laboratory assessment of the RT-QuIC assay for the analysis of olfactory mucosa samples Chiara Maria Giulia De Luca (<i>Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy</i>) Macromolecular chaperones in human cerebrospinal fluid inhibit α -synuclein aggregation in seeding aggregation assays by interacting with oligomeric intermediates Giovanni Bellomo (<i>University of Perugia, Perugia, Italy</i>) Chemical chaperones to tackle Parkinson's disease Jordi Pujols (<i>Autonomous University of Barcelona, Bellaterra, Spain</i>)	

14:00 – 15:30	Symposium 37: Under40 The emerging role of microRNAs in experimental and clinical multiple sclerosis Chairpersons: F. De Vito – I. Grossi	Hall B
	 MiR-125a-3p impairs oligodendrocyte differentiation and endogenous remyelination: a new potential target for myelin repair Davide Marangon (<i>University of Milan, Milan, Italy</i>) Cross-talk between ER-acetylation machinery and microRNA: new insights in the pathogenesis of multiple sclerosis Nicola S. Orefice (<i>University of Wisconsin-Madison, Wisconsin, USA</i>) Extracellular vesicle miRNAs track cognitive symptoms in multiple sclerosis patients Martina Gabrielli (<i>CNR Institute of Neuroscience, Milan, Italy</i>) MicroRNAs are crucial regulators of inflammatory-driven synaptic dysfunction and disease course in multiple sclerosis Francesca De Vito (<i>IRCCS INM-Neuromed, Pozzilli, Italy</i>)	

15:30 – 16:30	Plenary Lecture: The role of the Cerebellum in reinforcement learning Michael Goldberg (<i>Columbia University, New York, USA</i>) Chairperson: A. Genovesio	Plenary Hall
16:30 – 18:00	Symposium 38: Remodeling of glial cells in brain diseases: all roads lead to neuroinflammation? Chairpersons: D. Lim – A. Verkhratsky	Plenary Hall
	Astrocytes in the pathophysiology of AD from reactivity to atrophy and loss of function Alexei Verkhratsky (<i>University of Manchester, Manchester, United Kingdom</i>) Time-dependent microglial responses to A β challenge: the two faces of neuroinflammation Sara Merlo (<i>University of Catania, Catania, Italy</i>) Microbiota modulation counteracts neuroinflammation in 3xTg-AD mice Laura Bonfili (<i>University of Camerino, Camerino, Italy</i>) microRNAs: key regulators of astrocyte mediated inflammation in CNS Pathologies Eleonora Aronica (<i>University of Amsterdam, Amsterdam, The Netherlands</i>)	
16:30 – 18:00	Symposium 39: Under40 Molecular mechanism of protein homeostasis: implication for neurodegenerative diseases Chairpersons: R. Cristofani – D. Piol	Hall A
	 Analyses of neuromuscular diseases related frameshift mutations in the small Heat Shock Protei B8 (HSPB8) unveil a shared gain of toxic function Barbara Tedesco (<i>University of Milan, Milan, Italy</i>) Hsp90-mediated regulation of DYRK3 couples stress granule disassembly and growth via mTORC1 signaling: implications for Amyotrophic Lateral Sclerosis Laura Mediani (<i>University of Modena and Reggio Emilia, Modena, Italy</i>) Serine 96 phosphorylation modifies Androgen Receptor stability and function in SBMA models Diana Piol (<i>University of Trento, Trento, Italy</i>) Sorting of RNA and RNA-binding proteins in extracellular vesicles Vito D'Agostino (<i>University of Trento, Trento, Italy</i>)	
16:30 – 18:00	Symposium 40: Under40 Current perspectives on the role of oxidative stress in Alzheimer's disease: challenges and therapeutic opportunities Chairpersons: G. Abate – A. Tramutola	Hall B
	 Crosstalk between oxidative stress and aberrant insulin signalling in the brain: insights for neurodegeneration Eugenio Barone (<i>Sapienza University of Rome, Rome, Italy</i>) Engineering proteins as novel candidates for Alzheimer's disease treatment Cristian Ripoli (<i>Università Cattolica del Sacro Cuore, Rome, Italy</i>) Oxidative stress as a source of novel predictive biomarkers for Alzheimer's disease: the potential of a conformational variant of p53 Giulia Abate (<i>University of Brescia, Brescia, Italy</i>) The transcription factor Nrf2 as pharmacological target: in vitro characterization of new nature-inspired molecules Francesca Fagiani (<i>University of Pavia, Pavia, Italy</i>)	
18:00 – 19:00	Plenary Lecture: There's more to taste than meets the tongue Alfredo Fontanini (<i>Stony Brook University, Stony Brook, USA</i>) Chairperson: M. Memo	Plenary Hall
19:00 - 19:30	Awards and closing remarks: Chairpersons: M. Memo - P. Calabresi	Plenary Hall
19:30 - 20:30	General Assembly of SINS members	Plenary Hall