

COGNITION AND BEHAVIOR

Symposium 1

A sense for number in fish, humans and machines

Chairs: **Elisa Castaldi** *Department of Neuroscience, Psychology, Pharmacology and Child Health (NEUROFARBA), University of Florence, Florence, Italy* • **Guido Marco Cicchini** *Institute of Neuroscience, CNR, Pisa*

The development of number neurons in larval zebrafish

Zanon, Mirko (Centre for Mind/Brain Sciences, University of Trento, Rovereto, Italy);

Evidence for a number sense in humans

Cicchini, Guido Marco (Institute of Neuroscience, CNR, Pisa, Italy);

Psychophysiological and neural signatures of numerosity perception

Castaldi, Elisa (Department of Neuroscience, Psychology, Pharmacology and Child Health (NEUROFARBA), University of Florence, Florence, Italy);

Neurocomputational foundations of numerosity perception

Zorzi, Marco (Department of General Psychology, University of Padova, Padova, Italy & Computational Neuroimaging Laboratory IRCCS San Camillo Hospital, Venice-Lido (Italy));

Symposium 2

The affective-communicative-sensory interplay in psychiatric disorders: evidence from animal models

Chairs: **Sara Anna Bonini** *University of Brescia, Italy* • **Giovanni Provenzano** *University of Trento, Italy*

Unravelling mice ultrasonic vocalizations: correlation between communication and behavior

Premoli, Marika (University of Brescia, Brescia, Italy);

Effects of isolation rearing on amphetamine-induced ultrasonic vocalizations and neurodegeneration

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

Serotonergic/glutamatergic co-transmission in the amygdala: a neuromodulator of emotion

Hamed, Adam (Nencki Institute of Experimental Biology, Warsaw, Poland);

Sensory Webs: Tactile Alterations in Psychiatric Mouse Models

Balasco, Luigi (Catholic University of the Sacred Heart, Roma, Italy);

Symposium 3

UNDER 40

Neurobiological Insights into Obesity and Eating Disorders

Chairs: **Marzia Friuli** *"Sapienza" University of Rome, Italy* • **Alessia Costa** *University of Florence*

Neurological impairments in dysmetabolism: exploring glucose homeostasis and pharmacological targeting

Aimaretti, Eleonora (University of Turin);

GluA3 in food-related neural circuits and eating behavior

Italia, Maria (University of Milan);

Selective orexin-1 receptor antagonism: innovative approach for binge eating behavior

Botticelli, Luca (University of Camerino);

Exploring hypothalamic molecular landscapes in a mouse model of anorexia

Eramo, Barbara ("Sapienza" University of Rome);

Symposium 4**UNDER 40****Neural bases of social cognition in animal models**

Chairs: **Francesco Ceccarelli** *Sapienza University, Rome, Italy* • **Lorenzo Ferrucci** *Sapienza University, Rome, Italy*

Macaque premotor cortex neuronal dynamics during human-monkey observational learning task

Ceccarelli, Francesco (Sapienza University, Rome, Italy);

Modelling object value and choice probability from monkey's social behavior

Nougaret, Simon (Institut de Neurosciences de la Timone, Marseille, France);

Emotion modulation on interbrain dynamics

Antonelli, Federica (Istituto Italiano di Tecnologia, Genova, Italy);

From dementia to autism: rethinking to understand genetic neurodegenerative disorders

Monaco, Mariagrazia (Telethon Institute of Genetics and Medicine (TIGEM), Pozzuoli, Italy);

Symposium 5**Shedding light on genetic and environmental factors underlying psychiatric disorders**

Chairs: **Maria Antonietta De Luca** *University of Cagliari, Italy* • **Sarah Beggato** *University of Ferrara, Ferrara, Italy*

Response to environmental stimuli is influenced by BDNF Val66Met polymorphism

Ieraci, Alessandro (eCampus University, Novedrate (CO), Italy);

Effects of early exposure to phytocannabinoids

Micale, Vincenzo (University of Catania, Catania, Italy);

Neurobiological consequences of adolescent inhalation of synthetic cannabinoid receptor agonists

Pintori, Nicholas (University of Cagliari, Cagliari, Italy);

Neurodevelopmental cannabinoids exposure induces enduring kynurenine pathway alterations

Beggato, Sarah (University of Ferrara, Ferrara, Italy);

Symposium 6**From self to others: neurobiology of social decision-making across species**

Chairs: **Diego Scheggia** *University of Milan, Italy* • **XXXXXXXXXX**

Negative self-experiences shape responses to others' emotional states

Maltese, Federica (CNR, Institute of Neuroscience c/o University of Milano-Bicocca, Veduggio al Lambro (MB) Italy);

Prosocial decision-making in food-foraging contexts

Márquez, Cristina (Center for Neuroscience and Cell Biology, CNC-UC. Coimbra. Portugal);

Prefrontal-amygdala coordination during prosocial decisions

Dal Monte, Olga (Department of Psychology University of Turin, Italy);

Individual differences in prosocial learning are represented in the hippocampus

Scheggia, Diego (Department of Pharmacological and Biomolecular Sciences "Rodolfo Paoletti", University of Milan, Italy);

Symposium 7

From Cells to Behavior: Unraveling the Specificity of Serotonergic Networks

Chairs: **Massimo Pasqualetti** *Department of biology, University of Pisa, Italy* • **Luisa Lo Iacono** *Department of translational research and of new surgical and medical technologies, University of Pisa, Italy*

Molecular organisation and activity dynamics of Dorsal Raphe serotonin subpopulations

Pollak-Dorocic, Iskra (Department of Biochemistry and Biophysics, Stockholm University, Sweden to);

A miRNA-based functional unit in the Dorsal Raphe: the miRcuit.

Lo Iacono, Luisa (Department of translational research and of new surgical and medical technologies, University of Pisa, Italy);

Serotonin circuits in the emergence of innate fear across species

Zanni, Giulia (Department of Developmental Neuroscience, Columbia University, New York, US);

From emotional contagion to adaptive behavior: a brain serotonin echo

Mondoloni, Sarah (Institut de neurobiologie de méditerranée (INMED) - INSERM U1249 Parc Scientifique de Luminy Marseille, France);

DEVELOPMENT

Symposium 8

Choroid Plexus Signaling: Shaping Brain Development and Function

Chairs: **Annarita Patrizi** *Interdisciplinary center for Neurosciences (IZN), Heidelberg, Germany* • **Simona Lodato** *HUNIMED, Milan, Italy*

Investigating human choroid plexus maturation and function using organoids

Pellegrini, Laura (King's College London, London, UK);

The choroid plexus and physiological states: a dynamic duo

Silva-Vargas, Violeta (Biozentrum, Basel, Switzerland);

The choroid plexus and the non-cell autonomous brain regulation

Patrizi, Annarita (Interdisciplinary center for neurosciences (IZN), Heidelberg, Germany);

Investigating human neurodevelopment with a novel 3D choroid plexus model

Lodato, Simona (UNIMED, Milan, Italy);

Symposium 9

UNDER 40

Not just neurons: genetic and extrinsic factors underlying neurodevelopmental disorders

Chairs: **Vito Antonio Baldassarro** *University of Bologna* • **Erica Tagliatti** *IRCCS Humanitas Hospital, Italy*

Myelin and beyond: oligodendrocyte precursor cells vulnerability during development

Baldassarro, Vito Antonio (University of Bologna);

Microglial Trem2 controls neuronal metabolism and synapses during development.

Tagliatti, Erica (IRCCS Humanitas Hospital, Italy);

Sex-based regulation of brain blood vessels after gestational infection.

Rasile, Marco (Humanitas University);

Metabolic alterations in developing astrocytes contributes to Del22q11.2 syndrome pathophysiology

Cantando, Iva (University of Lausanne);

Symposium 10

Neocortex development and evolution – focus on radial glia

Chairs: **Nereo Kalebic** *Human Technopole, Italy* • XXXXXXXXXX

Radial glia morphology in neocortex development and evolution

Kalebic, Nereo (Human Technopole, Milan);

Radial Glia Under Fire: The Immune impact on Brain Development

Krenn, Veronica (University of Milan-Bicocca);

Functional Integration of transplanted human neurons in WT mouse embryos

La Rosa, Letizia (Italian Institute of Technology, Genova);

How the extracellular matrix shapes the developing human brain

Long, Katie (King's College London, UK);

Symposium 11

Shining light on cortical dysfunction in neurodevelopmental disorders

Chairs: **Anna Letizia Allegra Mascaro** *CNR, Italy* • XXXXXXXXXX

Cortical underpinnings of tactile perception in autism

Semelidou, Ourania (INSERM, France);

Visuomotor Learning Deficits in a Mouse Model of Rett Syndrome

Duguid, Ian (The University of Edinburgh, UK);

Age-Dependent Cortical Overconnectivity in Shank3 Mice is Reversed by Anesthesia

Allegra Mascaro, Anna Letizia (National Research Council, Neuroscience Institute);

Visual Cortical Profiling as Biomarker for Neurodevelopmental Disorders

Mazziotti, Raffaele Mario (University of Florence, Italy);

Symposium 12

UNDER 40

Unraveling Neurodevelopmental Trajectories: Impact of Early-Life Challenges

Chairs: **Michele Santoni** *University of Cagliari, Cagliari* • **Valentina Castelli** *University of Palermo, Palermo*

Untangling the impact of pre-and post-natal insults on neurodevelopment

Bove, Maria (University of Foggia, Foggia);

Prenatal-IL-6 elevation alters the developmental GABAergic switch in the offspring

Desiato, Genni (Institute of Neuroscience (IN-CNR), National Research Council of Italy, Milan);

Neuroplastic mechanisms in addictive processes: focus on cognition during adolescence

Mottarlini, Francesca (University of Milan, Milan);

Developmental phytocannabinoids exposure: relevance for autism spectrum disorder

Rava, Alessandro (Roma Tre University, Rome);

Symposium 13

Cerebral Cortex Development and Disorders: a Reelin Perspective

Chairs: **Ugo Borello** *University of Pisa, Italy* • **Alessandra Pierani** *Université Paris Cité, Institute of Psychiatry and Neuroscience of Paris, INSERM U1266*

Reelin sources in normal and pathological control of neuronal migration

Pierani, Alessandra (*Université Paris Cité, Institute of Psychiatry and Neuroscience of Paris, INSERM U1266*);

Molecular mechanisms of Reelin on ADLTE and Autism Spectrum Disorders

Dazzo, Emanuela (*Neuroscience Institute – CNR – Padua Office*);

Clinical aspects of the Reelin role on ADLTE

Michelucci, Roberto (*Irccs-Istituto delle Scienze Neurologiche di Bologna*);

Modelling Reelin role on corticogenesis

Crapanzano, Erica Lucia (*Unit of Cell Biology and Development – Dept. of Biology – University of Pisa*);

Symposium 14

Epigenetic regulation of neurodevelopment in health and disease

Chairs: **Michela Ori** *Department of Biology, University of Pisa, Italy* • **XXXXXXXXXX**

Exploring semaphorin-chd7 interactions in a mouse model of CHARGE syndrome

Cariboni, Anna (*Department of Pharmaceutical and Biomedical Sciences, University of Milan, Italy*);

Identification of repurposed epi-drugs in a C.elegance CHARGE syndrome model

Di Schiavi, Elia (*Institute of Bioscience and BioResources, CNR, Naples, Italy*);

Inhibition of ASCL1 phosphorylation enhances chromatin accessibility during neurogenesis

Azzarelli, Roberta (*UCL School of Pharmacy, University College London 29-39 Brunswick Square, WC1N 1AX London - UK*);

Neurodevelopmental impact of maternal-zygotic knockout of Setd5 epigenetic regulator

Di Gregorio, Matteo (*Department of Biology, University of Pisa, Italy*);

DISORDERS OF THE NERVOUS SYSTEM

Symposium 15

Current Approaches and Future Perspectives in Hereditary Spastic Paraplegia Research

Chairs: **Fabrizia Cesca** *University of Trieste, Italy* • **Maria Marchese** *IRCCS Fondazione Stella Maris, Pisa, Italy*

Structural Biology Meets Medicinal Chemistry: Drug Repurposing Strategies for HSP

Rossi Sebastiano, Matteo (*Dept. of Molecular Biotechnologies and Health Science, University of Turin, Italy*);

Patient Cell Models to Study KIDINS220-dependent SINO and ALSIN2-dependent IAHS

Cesca, Fabrizia (*Dept. of Life Sciences, University of Trieste, Italy*);

Targeting Spastin Degradation to Treat HSP Type 4

Rinaldo, Cinzia (*National Research Council (CNR), Institute of Molecular Biology and Pathology (IBPM), c/o University of Rome Sapienza, Italy*);

In Vivo and In Vitro Models of HSP Type 56

Galatolo, Daniele (*Molecular Medicine for Neurodegenerative and Neuromuscular Diseases Unit, IRCCS Fondazione Stella Maris, Pisa, Italy*);

Symposium 16

Hallucinogens for better understanding and treatment of brain disorders

Chairs: **Viviana Trezza** *Roma Tre University, Italy* • XXXXXXXXXX

Chronic non-psychedelic psilocybin promotes visual rehabilitation in mice post-occipital stroke

Comai, Stefano (University of Padova);

LSD reduces alcohol consumption and reverts dopaminergic dysfunction in mice

De Gregorio, Danilo (Vita-Salute San Raffaele University);

Neuroplastic effects of ketamine in Shank3 autism

Masi, Alessio (University of Florence);

Primary neuronal cultures to dissect the cellular mechanisms of hallucinogens

Mingardi, Jessica (Università degli Studi Milano Bicocca);

Symposium 17

Advancing Therapeutic Strategies for Neurodevelopmental Disorders: Bridging Science and Care

Chairs: **Laura Baroncelli** *Neuroscience Institute, CNR, Italy* • **Benjamin D Philpot** *UNC Neuroscience Center, University of North Carolina, Chapel Hill, NC USA*

The Winding Road Towards Gene Therapy for Creatine Transporter Deficiency

Iovino, Ludovica (Neuroscience Institute, National Research Council, Pisa, Italy);

Translational Opportunities for Angelman Syndrome

Philpot, Benjamin D (UNC Neuroscience Center, University of North Carolina, Chapel Hill, NC USA);

A Self-regulating Gene Therapy for Rett Syndrome

Hector, Ralph (Centre for Discovery Brain Sciences, University of Edinburgh, Edinburgh, Scotland);

Pathogenic variants of 14-3-3 γ associate with developmental and epileptic encephalopathy

Giusto, Elena (IRCCS San Camillo Hospital, Venice, Italy);

Symposium 18

Rescuing mitochondrial activity as therapeutic approach in neurodegenerative diseases

Chairs: **Marco Scarselli** *University of Pisa, Italy* • **Roberto Maggio** *University of L'Aquila, Italy*

Loss of proteostasis in neurodegenerative diseases and mechanisms of protection

Ziviani, Elena (University of Padua, Italy);

Rescue of mitochondrial dysfunction in a cellular model of PD

Scarselli, Marco (University of Pisa);

Targeting mitochondrial CB1 receptors: from bioenergetics to behavior

Marsicano, Giovanni (Neurocenter Magendie, Bordeaux, France);

The C-terminus of M2R: a new biomarker for neurodegenerative diseases

Fasciani, Irene (University of L'Aquila, Italy);

Symposium 19**UNDER 40****The role of microglia in regulating brain development and repair**Chairs: **Stefano Raffaele** *Università degli Studi di Milano, Italy* • XXXXXXXXXX**Microglial EVs mediate C1q deposition at pre-synapse promoting synaptic pruning**

D'Arrigo, Giulia (CNR – Istituto di Neuroscienze);

Microglia drive neuronal dysfunction in Down syndrome via inhibition

Tiberi, Alexia (Bio@SNS, Scuola Normale Superiore di Pisa);

Microglial TNFR2 regulates myelin regeneration and functional recovery after stroke

Raffaele, Stefano (Università degli Studi di Milano);

Human brain microglia: phenotypes and neuronal interactions in epilepsy

Milior, Giampaolo (Jacob Institut, CEA, Paris);

Symposium 20**Environment matters: deconstructing vulnerability in the trajectory of aberrant behaviors**Chairs: **Lucia Caffino** *Department of Pharmacological and Biomolecular Sciences, University of Milan, Italy* • **Nazzareno Cannella** *School of Pharmacy, School of Pharmacy, Center for Neuroscience, Pharmacology Unit, University of Camerino, Italy***Novel viral approach for gestational THC memory and mitochondria dysfunction**

Lavanco, Gianluca (Dept. Health Promotion, Maternal-Child, Internal Medicine and Specialist Excellence, University of Palermo, Palermo, Italy);

Neuroplastic mechanisms underlying social reward deficits following early life isolation

Manduca, Antonia (Dept. Physiology and Pharmacology, Sapienza University of Rome, Rome, Italy);

Paradoxical effect of stress-related Neuropeptide S on AUD and impulsivity

Cannella, Nazzareno (School of Pharmacy, School of Pharmacy, Center for Neuroscience, Pharmacology Unit, University of Camerino, Italy);

Metabolomic insights into a new way to promote stress resilience

Brivio, Paola (Department of Pharmacological and Biomolecular Sciences, University of Milan, Italy);

Symposium 21**Neurological and Neuropathological Role of the Histone Acetylation Erasers HDACs**Chairs: **Lucio Annunziato** *Univ. degli Studi di Napoli Federico II: Dip di Neuroscienze* • **Marina Pizzi** *Univ di Brescia Dipartimento di Medicina Molecolare e Traslazionale***HDAC9 knockdown alleviates ferroptotic neuronal death after stroke**

Formisano, Luigi (Univ. degli Studi di Napoli Federico II: Dip di Neuroscienze);

Combination of HDAC inhibitors to reduce neuronal death in ALS

Pizzi, Marina (Univ di Brescia Dipartimento di Medicina Molecolare e Traslazionale);

IL-1 β triggers neurological deficits via HDAC4/MeCP2 Epigenetic-Complex in HSV-1-infected mice

Li Puma, Domenica Donatella (Università Cattolica Dipartimento di Neuroscienze);

Anti-migraine drug-induced gene expression reprogramming in the trigeminal pain pathway

Buonvicino, Daniela (Univ. degli Studi di Firenze; Dipartimento di Scienze della Salute);

Symposium 22

Surfing the calcium wave: from physiology to pathology in neuroglia

Chairs: **Giulia Dematteis** *INSERM, U1215 NeuroCentre Magendie, Group "Endocannabinoids and Neuroadaptation", Italy* • XXXXXXXXX

Impaired proteostasis and endoplasmic reticulum-mitochondria interactions in Alzheimer's disease astrocytes.

Bonfili, Laura (School of Biosciences and Veterinary Medicine, University of Camerino, Via Gentile III da Varano, 62032, Camerino, MC, Italy.);

Mitochondria shapes astrocytes' calcium signalling, from physiology to Parkinson disease.

Dematteis, Giulia (INSERM, U1215 NeuroCentre Magendie, Group "Endocannabinoids and Neuroadaptation" 146 rue Leo Saignat, Bordeaux 33077, France.);

Calcineurin B1 deletion in astrocytes rescues Alzheimer's disease pathology.

Tapella, Laura (Università degli Studi del Piemonte Orientale, Novara, Italy.);

A downward dysregulation for astrocyte Ca²⁺ signal in Alzheimer.

Zonta, Micaela (Neuroscience Institute, National Research Council (CNR), Padua, Italy.);

Symposium 23

UNDER 40

On the role of intracellular Ca²⁺-storing organelles in neurodegenerative diseases.

Chairs: **Silvia Piccirillo** *University Politecnica of Marche, Italy* • XXXXXXXXX

Lysosomal channels as targets for pharmacological therapy in neurodegenerative diseases.

Tedeschi, Valentina (Divisione di Farmacologia Dipartimento di Neuroscienze, Scienze Riproduttive e Odontostomatologiche Università degli Studi di Napoli "Federico II" Via Sergio Pansini 5, 80131, Napoli);

Neurotoxicity of air pollution ultrafine component: role of Ca²⁺-storing organelles.

Sapienza, Silvia (University of Kent, School of Biosciences, Tullet Laboratory, canterbury, UK.);

Ca²⁺ signaling role for directed migration of human iPSC-derived microglia.

Granzotto, Alberto (Center for Advanced Studies and Technology – CAST, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy Department of Neuroscience, Imaging, and Clinical Sciences, University G. d'Annunzio of Chieti-Pescara, Chieti, Italy);

Targeting mitochondrial ionic homeostasis as pharmacological strategy in neurodegenerative. diseases

Piccirillo, Silvia (Department of Biomedical Sciences and Public Health, School of Medicine, University "Politecnica delle Marche", Via Tronto 10/A, 60126 Ancona, Italy.);

Symposium 24

Motor Neuron Disease: advances into therapeutic strategies and biomarker discovery

Chairs: **Roberta Piovesana** *Université de Montréal, Canada* • XXXXXXXXX

Time-dependent cortical projection neuron alterations in SMA model

Schellino, Roberta (Dip. di Neuroscienze "Rita Levi Montalcini" e Neuroscience Institute Cavalieri Ottolenghi, Università degli Studi di Torino, Italia);

Unraveling the role of tau phosphorylation in amyotrophic lateral sclerosis.

Petrozziello, Tiziana (Sean M. Healey & AMG Center for ALS at Mass General, Massachusetts General Hospital, Boston, MA 02129, USA);

Studying neuromuscular junction as source of potential biomarker in ALS

Piovesana, Roberta (Université de Montréal, Canada);

A Novel Antibody Target for ALS Therapy

Pozzi, Silvia (Université Laval, Québec, Canada);

Symposium 25

Models and approaches to tackle neurodevelopmental disorders heterogeneity

Chairs: **Antonella De Jaco** *Sapienza University of Rome, Italy* • **Marilena Griguoli** *IBPM-CNR, EBRI, Rome, Italy*

New RNA Therapy Strategies for Neurodevelopmental Disorders

Barberis, Andrea (IIT, Genoa, Italy);

Modelling genetics and hormonal load for ASD in brain organoids

Chiaradia, Ilaria (Cambridge University, UK);

Mechanisms of synaptic dysfunction in the Angelman syndrome

Fossati, Matteo (IN-CNR and Humanitas, Milan, Italy);

Early cerebellar circuit alterations in an murine model of Ataxia-Telangiectasia

Hoxha, Eriola (University of Turin, Italy);

Symposium 26

Tracing Neurodegeneration at Synapses Through Molecular Lenses

Chairs: **Elena Marcello** *Department of Pharmacological and Biomolecular Sciences "Rodolfo Paoletti", Università degli Studi di Milano* • **Marco Mainardi** *Department of Biomedical Sciences, Università degli Studi di Padova*

Brain insulin resistance impairs memory via alteration of protein S-palmitoylation

Fusco, Salvatore (Department of Neuroscience, Università Cattolica del Sacro Cuore, Roma);

Targeting prefrontal-raphé circuits with non-invasive brain stimulation in 3xTg-AD mice

Marchiotti, Federica (Department of Neurosciences, Biomedicine and Movement Sciences, Section of Physiology and Psychology, Università degli Studi di Verona);

Decoding synaptic failure in Alzheimer disease to identify novel biomarkers

Pelucchi, Silvia Cecilia (Department of Pharmacological and Biomolecular Sciences "Rodolfo Paoletti", Università degli Studi di Milano);

Proteomic analysis of lifestyle impact on healthy and diseased synapses

Mainardi, Marco (Department of Biomedical Sciences, Università degli Studi di Padova);

Symposium 27

Autism Spectrum Disorder: from mechanisms to therapy

Chairs: **Stefano Espinoza** *Università Del Piemonte Orientale, Italy* • **Marta Biagioli** *University of Trento*

Early-life adversity shapes behavioral trajectories in CNTNAP2 heterozygous mice

Chelini, Gabriele (CNR Neuroscience Institute, Pisa, Italy.);

Inflammation and oxidative stress support autism-related behaviors in mice

Pangrazzi, Luca (Institute for Biomedical Aging Research, University of Innsbruck, Austria);

Negr1 as a possible convergent hub for autistic spectrum disorders

Cancedda, Laura (Brain Development and Disease Laboratory, Istituto Italiano di Tecnologia, Genova, Italy);

Phenotypes associated with CHD8 haploinsufficiency are rescued by SINEUP-RNA

Bonaldo, Brigitta (Department of Health Sciences and Research Center on Autoimmune and Allergic Diseases (CAAD), Università del Piemonte Orientale);

Symposium 28

Neuroscientific and neuroengineering methods for early Alzheimer's disease diagnosis

Chairs: **Lorenzo Gaetano Amato** *Scuola Superiore Sant'Anna, Italy* • **Alberto Mazzoni** *Scuola Superiore Sant'Anna, Italy*

Recent Advances in Multimodal Prediction of Cognitive Decline Evolution

Bessi, Valentina (Università di Firenze);

Plasma Biomarkers of Alzheimer's Disease: Open Challenges and Future Perspectives

Giacomucci, Giulia (Azienda Ospedaliero-Universitaria Careggi);

Interpretable Machine Learning Models for Early Alzheimer's Disease Diagnosis

Sibilano, Elena (Politecnico di Bari);

Advancing Alzheimer's disease Diagnosis Combining EEG Recordings and Computational Approaches

Mazzoni, Alberto (Scuola Superiore Sant'Anna, Italy);

Symposium 29

UNDER 40

Exploring innovative pathways towards cell-therapy approaches for the nervous system

Chairs: **Marta Ribodino** *Università di Torino, Italy* • **Linda Scaramuzza** *Università degli Studi di Milano, Italy*

Exploring Patient-Derived Cell Transplantations in Disease-Mimicking Models of Parkinson's Disease

Corsi, Sara (Lund University, Sweden);

Mapping Dopaminergic Identities Through Their Axon Target Specificity

Fiorenzano, Alessandro (Università degli Studi di Napoli, Italy);

CRISPRa-based Strategies to Enhance Oligodendroglial Differentiation from human iPSC

Luciani, Marco (IRCCS Ospedale San Raffaele, Italy);

Optimizing Cell-Therapy Approaches to Reconstruct Striatal Circuitries in Huntington's Disease

Ribodino, Marta (Università degli Studi di Torino, Italy);

Symposium 30

Early-Life Stress, Immunology and Gut Microbiome: Mechanisms and Therapeutic Horizons

Chairs: **Annamaria Cattaneo** *University of Milan, department of Pharmacological and Biomolecular Sciences* • **Judith Homberg** *Radboud University Medical Center, Donders Institute for Brain, Cognition, and Behaviour*

Maternal alterations in the gut-immune communication and offspring behavioral outcomes

Cattaneo, Annamaria (University of Milan, department of Pharmacological and Biomolecular Sciences);

Maternal Tph1 genotype influences offspring behaviour, inflammation and gut microbiome

Homberg, Judith (Radboud University Medical Center, Donders Institute for Brain, Cognition, and Behaviour);

Role of maternal milk in the intergenerational transmission of stress

Korosi, Aniko (University of Amsterdam);

Childhood Trauma Impact on Brain Morphology, Connectivity, and Clinical Outcomes

Quattrini, Giulia (IRCCS Fatebenefratelli Institute);

Symposium 31

Neuroimmune crosstalk in neurodegenerative diseases

Chairs: **Georgia Mandolesi** *University of Rome San Raffaele, Italy* • **Diego Centonze** *University of Rome Tor Vergata and IRCCS Neuromed (Pozzilli, IS), Italy*

The link between inflammation and network dysfunction in neurological diseases.

Di Filippo, Massimiliano (), Section of Neurology, Department of Medicine, University of Perugia, Perugia, Italy);

The inflammation-resolution axis in Parkinson's disease.

Chiurchiù, Valerio (Institute of Translational Pharmacology, CNR and Laboratory of Resolution of Neuroinflammation, IRCCS Santa Lucia Foundation, Rome, Italy);

The role of neutrophils in Alzheimer's disease.

Constantin, Gabriela (Department of Medicine, University of Verona, Strada le Grazie 8, 37134 Verona, Italy; The Center for Biomedical Computing (CBMC), University of Verona, 37134 Verona, Italy);

A role for the microglial dopamine D2 receptor in MS-synaptopathy.

Balletta, Sara (IRCCS Neuromed, Pozzilli, IS, Italy);

Symposium 32

Membrane, intracellular and post-transductional mechanisms in neurodegeneration: new druggable targets

Chairs: **Domenico E. Pellegrini-Giampietro** *University of Florence, Italy* • **Agnese Secondo** *University "Politecnica Delle Marche", Italy*

Cannabinoids in neurodegenerative disorders: studies in in vitro models

Landucci, Elisa (University of Florence, Italy);

E3 ubiquitin ligase SIAH2 in mitochondrial control mechanisms in neurodegeneration

Scorziello, Antonella (Federico II University of Naples, Italy);

On the role of the TPC2 lysosomal channel in neurodegeneration

Vinciguerra, Antonio (University "Politecnica Delle Marche", Italy);

Cutamesine, a selective sigma-1 receptor agonist, in ischemic stroke

Puente Sanz, Alba (University of León, Spain);

Symposium 33

Exercise and Neuromodulation Improve Parkinson's Disease: Molecular and Clinical Evidence

Chairs: **Antonio Pisani** *University of Pavia, Italy* • **Paolo Calabresi** *IRCCS Fondazione Policlinico Universitario Agostino Gemelli*

Clinical outcomes of intensive physical activity in Parkinson's Disease

Di Lazzaro, Giulia (Neurologia, IRCCS Fondazione Policlinico Universitario Agostino Gemelli (Italy));

Non-pharmacological treatments in models of Parkinson's Disease: preclinical evidence

Gambelli, Jasmine (Dipartimento di Neuroscienze, Università Cattolica del Sacro Cuore (Italy));

Inflammation and synaptic plasticity: a TMS perspective

Stampanoni Bassi, Mario Alberto Ugo (IRCCS Neuromed (Italy));

Profiling biochemical signature of intensive physical activity in Parkinson's Disease

Di Martino, Deborah (Fondazione IRCCS Istituto Neurologico Nazionale C. Mondino (Italy));

Symposium 34

Novel multifaceted implications of monoaminergic dysregulation in nervous system disorders.

Chairs: **Anna Lisa Muntoni** *National Research Council of Italy (CNR), Neuroscience Institute, Cagliari* • **Maria Grazia Morgese** *University of Foggia, Foggia*

Amyloid-beta oligomer and monoaminergic alterations after obesogenic diet exposure.

Morgese, Maria Grazia (University of Foggia, Foggia);

Monoamines in experimental autoimmune encephalomyelitis: link between neuroinflammation and anhedonia?

Olivero, Guendalina (University of Genova, Genova);

How monoamine loss inflames the brain in Alzheimer's disease.

La Barbera, Livia (Università Campus Bio-Medico, Roma);

Effect of dopamine transporter inhibition in aged female rats.

Lubec, Jana (Paracelsus Medical University, Salzburg);

Symposium 35

Astrocytes as pivotal players and therapeutic targets in CNS diseases

Chairs: **Barbara Bettegazzi** *Università Vita Salute San Raffaele, Milan, Italy* • **Michele Simonato** *Università degli Studi di Ferrara and IRCCS San Raffaele Hospital*

Unveiling the impact of prenatal inflammation on astrocytes

Menna, Elisabetta (CNR, Institute of Neuroscience and Humanitas Research Hospital, Milan, Italy);

Astrocytic dysfunctions as contributors to epileptogenesis in symptomatic epilepsy

Di Sapia, Rossella (Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milan, Italy);

Exploiting astrocytic GDNF in gene therapy approaches for CNS diseases

Cattaneo, Stefano (IRCCS Neuromed, Pozzilli, Italy);

Exploring Gene Editing Tools for Astrocyte-Specific Therapy in Alexander Disease

Meneghini, Vasco (Vita Salute San Raffaele University and Theleton Institute for Gene Therapy, Milan, Italy);

Symposium 36

Mitochondrial Medicine: Advancing Therapeutic Frontiers

Chairs: **Michelangelo Mancuso** *UNIVERSITY OF PISA, Italy* • **Caterina Garone** *University of Bologna*

Unlocking the Therapeutic Potential for TK2 Deficiency

Garone, Caterina (University of Bologna);

Targeting Mitochondrial Dysfunction in Friedreich Ataxia: Advances in Therapeutic Strategies

Montano, Vincenzo (AOUP, Pisa);

Translational Advances in the Treatment of Mitochondrial Optic Neuropathies

LaMorgia, Chiara (University of Bologna);

From the Labs to Clinic: Cutting-Edge Trials in Mitochondrial Medicine

Mancuso, Michelangelo (UNIVERSITY OF PISA);

Deciphering the Complexity of Treatment-Resistant Schizophrenia: a multidisciplinary perspective

Chairs: **Annarita Barone** *Department of Neuroscience, University of Naples, Federico II, Italy* •

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Molecular Landscape of Schizophrenia: Post-Synaptic Density Alterations and Antipsychotic Response

Buonaguro, Elisabetta Filomena (UOCSM Terzigno - ASL NAPOLI 3 SUD);

Exploring Excitatory-Inhibitory Imbalance in Treatment-Resistant Schizophrenia: a TMS Approach

Barone, Annarita (Section of Psychiatry, Laboratory of Molecular and Translational Psychiatry, Unit of Treatment-Resistant Psychiatric Disorders, Department of Neuroscience, Reproductive Sciences and Dentistry, University of Naples "Federico II", School of Medicine, Naples);

Neuroimaging Signatures of Treatment-resistant Schizophrenia

Matrone, Marta (Department, Sapienza University of Rome, Faculty of Medicine and Psychology, Rome, Italy; Department of Mental Health Protection and Promotion, Unit of Addiction Pathology, ASL Rieti, Rieti, Italy.);

Advancing Diagnosis in TRS: PET Imaging and Machine Learning Approaches

De Simone, Giuseppe (Departament de Medicina, Facultat de Medicina i Ciències de la Salut, Institut de Neurociències, Universitat de Barcelona (UB), c. Casanova, 143, 08036 Barcelona, Spain; Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), c. Villarroel, 17);

Brain conditioning to induce ischemic tolerance: mechanisms and therapeutic opportunities

Chairs: **Diana Amantea** *University of Calabria, Italy* • **Ornella Cuomo** *Federico II University of Naples, Italy*

Plasmatic exosomes from remote conditioning as cargo of neuroprotective signals

Cuomo, Ornella (Federico II University of Naples, Italy);

Brain ischemic tolerance involves modulation of immune pathways in mice

Di Santo, Chiara (University of Calabria);

Preclinical multicenter trial of remote conditioning in stroke: design, harmonization and results

Fumagalli, Stefano (Institute of Pharmacological Researches Mario Negri IRCCS, Milan, Italy);

Clinical evidence of remote ischemic conditioning in acute ischemic stroke

Beretta, Simone (University of Milano Bicocca);

Extrinsic and Intrinsic factors to promote axon regeneration

Chairs: **Vittoria Raffa** *Università di Pisa, Italy* • **Alessandro Falconieri** *Università di Pisa, Italy*

High-fat diet induces metabolic and functional alterations in nerve regeneration

Falconieri, Alessandro (Università di Pisa, Italy);

Immune and metabolic control of sensorimotor function and repair

Di Giovanni, Simone (Imperial College London);

Interactions with nanoengineered platforms for neuronal regeneration

Shefi, Orit (Bar-Ilan University);

Biomechanic control of nerve fasciculation

Breau, Marie (Université Pierre e Marie Curie);

Symposium 40

Memory collapse in CNS disorders: neurobiological underpinnings and treatment implications

Chairs: **Maria Morena** *Dept. of Physiology and Pharmacology, Sapienza University of Rome* • **Erica Zamberletti** *Dept. of Biotechnology and Life Sciences and Neuroscience Center, University of Insubria*

Neuronal histamine modulates vulnerability and resilience to chronic stress

Provensi, Gustavo (Dept. of Neuroscience, Psychology, Drug Research and Child Health, University of Florence);

Neurobiological substrates of emotional memory alterations comorbid with epilepsy

Colangeli, Roberto (Dept. of Experimental and Clinical Medicine, Section of Neuroscience and Cell Biology, Università Politecnica delle Marche);

Understanding fear memory to improve therapies for PTSD

Morena, Maria (Dept. of Physiology and Pharmacology, Sapienza University of Rome);

Sex-dimorphism controls Dys-dependent cognitive dysfunctions in mice and humans

Geraci, Federica (Dept. of Biomedical and Biotechnological Sciences, University of Catania);

Symposium 41

Non-neuronal cell interactions in neurodevelopment and brain diseases

Chairs: **Roberta Facchinetti** *Department of Physiology and Pharmacology "V.Erspamer", Sapienza University of Rome* • **Mariagrazia Grilli** *Department of Pharmaceutical Sciences, Università del Piemonte Orientale, Novara*

Microglial TDP-43 mediates myelin refinement during early brain development

Compagnon, Anne Claire (Department of Biomedical Sciences, University of Lausanne, Switzerland);

Astrocyte-oligodendrocyte cross-talk in a model of beta amyloid toxicity

Valenza, Marta (Department of Physiology and Pharmacology "V.Erspamer", Sapienza University of Rome);

Glia-neural stem cell interactions in neurodevelopment and neurodegeneration

Pessolano, Emanuela (Department of Pharmaceutical Sciences, Università del Piemonte Orientale, Novara);

Glia-enriched organoids to model neuroinflammatory phenotypes of multiple sclerosis

Fagiani, Francesca (Division of Neuroscience, IRCCS San Raffaele Scientific Institute, Milan);

Symposium 42

A translational multiple sclerosis view: novel insight in therapeutical approaches

Chairs: **Paola Fadda** *University of Cagliari- Dept. Biomedical Science, Italy* • **Maria Giusepiina Cantarella** *University of Catania*

The pathogenesis of Multiple sclerosis as a continuum

Cocco, Eleonora (University of Cagliari);

Behavioral and cognitive dysfunctions in multiple sclerosis: the PIRA paradigm

Portaccio, Emilio (University of Florence);

Understanding behavior and cognition in MS in preclinical models

Mancini, Andrea (University of Perugia);

New pharmacological approaches in preclinical models of multiple sclerosis

Katia Domenica, Mangano (University of Catania);

EXCITABILITY, SYNAPTIC TRANSMISSION, NETWORK FUNCTIONS

Symposium 43

UNDER 40

Excitation - Inhibition: Mechanisms in Brain Development, Function and Disorders

Chairs: **Noemi Barsotti** *Università di Pisa, Italy* • **Martina Biagioni** *IRCCS Humanitas Research Hospital, Rozzano MI*

Developmental Excitation/Inhibition Imbalance Disrupts Social Circuit Function Via Transcriptional Remodeling

Stuefer, Alexia (Center for Neuroscience and Cognitive Systems, Istituto Italiano di Tecnologia, Rovereto, TN);

Synaptic Balance and Therapeutic Intervention Strategies for CDKL5 Deficiency Disorder

Gurgone, Antonia (Dipartimento di Neuroscienze, Università degli Studi di Torino);

Postnatal Development of the Tuberoinfundibular Dopamine System in the Mouse

Locarno, Andrea (Department of Biochemistry and Biophysics, Stockholm University);

Age-dependent modulation of Prefrontal Cortex - Locus Coeruleus connection

Nava, Luca (Neuromodulation of Cortical and Subcortical Circuits, Istituto Italiano di Tecnologia, Genova);

Symposium 44

Dissecting brain network functions by multimodal optical tools

Chairs: **Gian Michele Ratto** *Istituto di Biofisica, CNR, Italy* • **Valentina Emiliani** *INSERM Parigi*

In-vitro imaging to study the pathophysiology of v-ATPase dysfunction

Fassio, Anna (UniGe);

Imaging neuron-astrocyte networks in health and Alzheimer disease

Mariotti, Letizia (Istituto di Neuroscienze CNR);

Visualizing neuronal circuit dynamics in mouse models of brain disorders

Lodovichi, Claudia (Istituto di Biofisica CNR);

Holographic manipulation of neuronal circuits

Emiliani, Valentina (INSERM, Paris);

Symposium 45

Unraveling Human Microcircuits: Multimodal Ex Vivo Approaches

Chairs: **Silvia Marinelli** *EBRI, Italy* • **Nicola Specchio** *OPBG, Italy*

Electrophysiology from human organotypic brain slices: toward novel epilepsy therapies

Marinelli, Silvia (EBRI);

Spatiotemporal network dynamics and structural correlates in vitro human cortex

Sanchez-Vives, Maria Victoria (IDIBAPS);

Broad-band cortical ensembles in human tissue slices

Giugliano, Michele (Unimore; Sissa);

Preparation of acute human hippocampal slices for electrophysiological recordings

Monni, Laura (Charité – University of Berlin; Unimore);

NOVEL METHODS AND TECHNOLOGY DEVELOPMENT

Symposium 46

Novel Tools for Studying the Neural Dynamics Underlying Brain States

Chairs: **Chiara Magliaro** *University of Pisa, Italy* • **Umberto Olcese** *University of Amsterdam, The Netherlands*

Phenotyping circadian oscillations in 3D organoids

Tucci, Valter (Istituto Italiano di Tecnologia, Italy);

Allometric correlates of sleep via advanced in vitro brain models

Cerchio, Sonia (University of Pisa, Italy);

Modeling neural activity patterns in silico

Brofiga, Martina (University of Genoa, Italy);

Neurotechnological approaches to study neuronal mechanisms of perception in vivo

Olcese, Umberto (University of Amsterdam, The Netherlands);

Symposium 47

Metabolism and Neuroenergetics: Key Drivers of CNS Health and Dysfunction

Chairs: **Paola Tognini** *Scuola Superiore Sant'Anna, Italy* • **Piervito Lopriore** *University of Pisa, Italy*

The Neuron-Astrocyte Metabolic Unit: Role in Energetics, Plasticity and Pathology

Magistretti, Pierre (King Abdullah University of Science and Technology, Saudi Arabia);

Lactate Metabolism in the Control of Microglial Function

Paolicelli, Rosa Chiara (University of Lausanne, Switzerland);

Metabolic Trajectories in Human Neocortical Development

Dell'Anno, Maria Teresa (Fondazione Pisana per la Scienza ONLUS, Italy);

Novel NMR Approaches: Toward a Virtual Biopsy of the CNS

Luchinat, Enrico (University of Florence, Italy);

Symposium 48

UNDER 40

Innovative Cellular Models for Advancing Neurological Research

Chairs: **Matteo Bordoni** *IRCCS Mondino Foundation, Italy* • **Francesca Ciarpella** *University of Verona*

Characterization of 3D iPSC-derived model system for investigation of ALS

Mochi, Michela (Sapienza University of Rome);

Generation of iPSCs KO/C-terminus HA-tagged models for mutFSD1L neurodevelopmental disorder

Serpieri, Valentina (University of Pavia);

Patient-derived midbrain organoids to model PD pathology and test therapies

Frattini, Emanuele (IRCCS Foundation Ca' Granda Ospedale Maggiore Policlinico);

Murine-derived brain organoid to model Allan-Herndon-Dudley-Syndrome and discover new drugs

Ciarpella, Francesca (University of Verona);

Symposium 49

Advancing Neurological Research: The versatile Role of Biotoxins

Chairs: **Laura Restani** *CNR Neuroscience Institute, Pisa, Italy* • **Marco Pirazzini** *Department of Biomedical Science, University of Padua, Italy*

Botulinum Toxin in Motor Recovery: Innovation in Neurorehabilitation

Dalise, Stefania (Neurorehabilitation Unit, Department of Neuroscience, University Hospital of Pisa, 56124 Pisa, Italy.);

Antinociceptive actions of botulinum toxin A and its re-targeted derivatives

Matak, Ivica (Department of Pharmacology and Croatian Institute of Brain Research, University of Zagreb School of Medicine);

Neurotoxins in Focus: Clostridial toxins as Multifunctional Tools in Neuroscience

Restani, Laura (CNR Neuroscience Institute, Pisa, Italy);

Alpha-Latrotoxin as an innovative tool for studying peripheral nerve regeneration

Negro, Samuele (Department of Biomedical Science, University of Padua, Italy);

Symposium 50

Nanotools for neuroscience

Chairs: **Ilaria Tonazzini** *Istituto Nanoscienze CNR, Italy* • **XXXXXXXXXX**

Glial-engineering: Advanced nanomaterials interfaces and devices to stimulate glial cells

Benfenati, Valentina (Institute for Organic Synthesis and Photoreactivity (ISOF)- Consiglio Nazionale delle Ricerche (CNR), Bologna, Italy);

Stimuli-responsive nanostructured materials for nerve regeneration and neuromodulation

Redolfi Riva, Eugenio (The Biorobotic Institute, Scuola Superiore Sant'Anna, Pisa, Italy);

Surface engineering of extracellular vesicles for RNA therapeutics' targeted delivery

Marchetti, Laura (Dept. of Pharmacy, University of Pisa, Pisa, Italy);

Nanocarriers to treat and monitor Angelman Syndrome neurodevelopmental disorder

Tonazzini, Iliara (Istituto Nanoscienze CNR, Italy);

SENSORY AND MOTOR SYSTEMS

Symposium 51

The Retina and Beyond: Linking Vision to Behavior

Chairs: **Serena Riccitelli** *IRCSS Ospedale Policlinico San Martino, Genova, Italy* • **Katja Reinhard** *SISSA Scuola Internazionale Superiore di Studi Avanzati, Trieste, Italy*

Reactivating Vision in Blind Mice

Di Marco, Stefano (UNIGE Università degli Studi di Genova, Genova, Italy);

Pupil-induced retinal binocularity potentiates low contrast vision

Rompani, Santiago (EMBL European Molecular Biology Laboratory, Roma, Italy);

Wired for Saliency: Neuroanatomical Foundations of Visual Feature Processing in Superior Colliculus

Khun, Norma (NERF Neuroelectronics Research Flanders, Leuven, Belgium);

Context-Dependent Spontaneous Population Dynamics in Superior Colliculus Orchestrate Visual Selective Attention

Jösch, Maximilian (ISTA Institute of Science and Technology Austria, Klosterneuburg, Austria);

Symposium 52

Brain Machine Interfaces and Neuroscience: promising tools for sensory-motor restoration

Chairs: **Francesco Edoardo Vaccari** *Dept. of Biomedical and Neuromotor Sciences, University of Bologna (IT)* • **Calogero Maria Oddo** *BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, (IT)*

Decoding from motor cortical populations and beyond: challenges and opportunities

Gallego, Juan Alvaro (Dept. of Bioengineering, Imperial College London (UK));

Neural decoding from posterior parietal cortex

Diomedì, Stefano (Institute of Cognitive Sciences and Technologies, National Research Council, Padova (IT));

Robotics and neuroscience for artificial tactile sensing

Oddo, Calogero Maria (BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, (IT));

Restoring sensori-motor functions via neuromodulation

Micera, Silvestro (Ecole Polytechnique Federale de Lausanne (CH); Scuola Superiore Sant'Anna, Pisa, (IT));

Symposium 53

Navigating the Dynamic World of Olfactory Processing

Chairs: **Serena Bovetti** *University of Torino, Italy* • **Paolo Marcello Peretto** *University of Torino, Italy*

The role of trigeminal activation in olfactory processing

Genovese, Federica (Université Paris Cité, CNRS, Unit of Functional and Adaptive Biology);

Revealing the Unsung Heroes: supporting and glial cells in olfaction

Dibattista, Michele (University of Bari);

Neuronal heterogeneity and plasticity in the olfactory bulb

Galliano, Elisa (University of Cambridge, Department of Physiology, Development and Neuroscience);

Olfactory dopaminergic cells: key players in sexual odor perception

Bovetti, Serena (Department of Life Sciences and Systems Biology & Neuroscience Institute Cavalieri Ottolenghi);

SLEEP, AUTONOMIC AND NEUROENDOCRINE SYSTEMS

Symposium 54

Unraveling Sleep: Technology, Brain Recovery, Gender Differences, and Evolution insights

Chairs: **Diletta Cavezza** *Istituto di Biochimica e Biologia Cellulare (IBBC), CNR, Naples* • **Giulia Arena** *University "La Sapienza", Rome, Italy*

Monitoring sleep in the age of wearable technologies

Faraguna, Ugo (University of Pisa, Pisa, Italy);

Sleep-like cortical bistability during wakefulness drives recovery after brain injury

Sarasso, Simone (University of Milan, Milan, Italy);

Slow-wave sleep impacts memory processes differently in males and females

Cavezza, Diletta (University of Rome "La Sapienza", Rome, Italy);

The evolution of deep and light sleep

Gilestro, Giorgio (Imperial College London, London, UK);