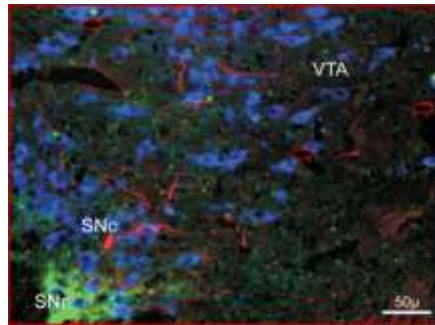




IN CNR Annual Retreat 2017
*Hotel Flamingo Resort,
 S. Margherita di Pula (CA)
 September 28–30, 2017*



Program

Thursday 28 September	
- >13:00	Registration and poster set up
14:00-14:30	Opening remarks
14:30-16:30	Session 1 BRAIN CELL PHYSIOLOGY AND PATHOLOGY
16:30-16:50	Coffee break
16:50-18:30	Session 2 NEW IN CNR RESEARCHERS
18:30-19:30	Poster Session 1 & Wine and cheese
20:00-21:30	Dinner
21:30-22:30	Plenary Lecture 1 Anna Lisa Bonfiglio (University of Cagliari) Innovative technologies for neuroelectronic interfaces
Friday 29 September	
8:30-10:30	Training Course (Imaging_cell) Gian Michele Ratto, Giorgio Carmignoto, Tommaso Cerullo
10:30-11:00	Coffee break
11:00-13:00	Session 3 NEURODEGENERATIVE DISEASES AND VISUAL SYSTEM
13:00-14:30	Lunch
14:30-15:30	Poster Session 2
15:30-17:00	Session 4 ADDICTION AND BEHAVIOUR
17:00-18:00	Plenary Lecture 2 Francesco Cucca (CNR IRGB) From genes to mechanisms
18:00-18:30	Wine and cheese
18:30-19:30	IN meeting
20:00-21:30	Dinner
Saturday 30 September	
8:30-10:10	Training Course (Imaging_network) Xin Yu, Federica Agosta
10:10-10:30	Coffee Break
10:30-11:30	Training Course (Imaging_brainstorming)
11:30-12:30	Session 5 MISCELLANEA
12:30-13:30	Lunch
13:30-14:30	Poster Session 3
14:30-14:45	Closing Remarks

Training Course speakers and topics

1. **Gian Michele Ratto (Italy)**, *CNR Nanoscience Institute and NEST, Scuola Normale Superiore, Pisa*. A window with a view: order and chaos in the brain visualized by two photon microscopy.
2. **Giorgio Carmignoto (Italy)**, *CNR Neuroscience Institute, Padova*. Optogenetic dissection of interneuron-type-specific signaling to astrocytes.
3. **Tommaso Cerullo (Italy)**, *Leica Microsystems Srl, Life Science Research, Milano*. Diving in for deeper insights (20 min sponsor's talk).
4. **Xin Yu (Germany)**, *Max Planck Institute for Biological Cybernetics, Tübingen*. Concurrent physiological multi-site calcium recordings and brain imaging: study of dynamic connectivity related to system and fluctuation states.
5. **Federica Agosta (Italy)**, *Scientific Institute San Raffaele, Milano*. Neuroimaging insights into network-based neurodegeneration.
6. **Imaging brainstorming** (Letizia Allegra Mascaro, Pietro Avanzini, Konstantinos Lefkimmatis)

Oral Communications

SESSION 1 BRAIN CELL PHYSIOLOGY AND PATHOLOGY

1. **Laura Restani (IN CNR)** Beyond motoneurons: transynaptic action of BoNT/A at central cholinergic boutons.
2. **Elisabetta Menna (IN CNR)** The immune molecule PTX3 controls the trafficking of AMPA receptors at the synapse.
3. **Irene Corradini (IN CNR and IRCCS Humanitas Milano)** Maternal immune activation delays excitatory-to-inhibitory GABA switch in the offspring.
4. **Marta Lombardi (IRCCS Humanitas Milano)** Microglia-derived extracellular vesicles regulate the recruitment, proliferation and differentiation of oligodendrocyte precursor cells.
5. **Patrizia Rosa (IN CNR)** Unveiling the mechanisms underlying oligodendrocyte differentiation: implications for Down syndrome.
6. **Beatrice Vignoli (Cibio, University of Trento)** Long-term potentiation (LTP) requires synaptic glia for proBDNF processing and recycling of the isolated pro-peptide (BDNFpro).

SESSION 2 NEW IN CNR RESEARCHERS

1. **Silvia Bassani (IN CNR)** The role of the female epilepsy protein PCDH19 between synapse and nucleus.
2. **Konstantinos Lefkimmatis (IN CNR)** Using FRET-based sensors to study the cAMP/PKA axis at the outer mitochondrial membrane.
3. **Elisa Greotti (IN CNR)** mCerulean3-based Cameleon sensor to explore mitochondrial Ca²⁺ dynamics *in vivo*.
4. **Pietro Avanzini (IN CNR)** When timing matters: the mirror mechanism observed through the lens of intracerebral recordings.
5. **Anna Letizia Allegra Mascaro (IN CNR)** *In vivo* optical imaging of rehabilitation-induced cortical plasticity after stroke.

SESSION 3 NEURODEGENERATIVE DISEASES AND VISUAL SYSTEM

1. **Elisabetta Tronci (University of Cagliari)** Pre- and post-synaptic alterations induced by BDNF over-expression in the 6-OHDA-lesioned rat model of Parkinson's disease.

2. **Giorgia Pallafacchina (IN CNR and Università di Padova)**. Loss-of-function mutations in the *SIGMAR1* gene cause distal hereditary motor neuropathy by impairing ER-mitochondria tethering and Ca²⁺ signaling.
3. **Giulia Costa (University of Cagliari)** Long lasting neurotoxic effects of MDMA administration during adolescence.
4. **Grazia Rutigliano (IN CNR e Scuola S. Anna Pisa)** TAAR1 mediates the protective effect of 3-iodothyronamine against β -Amyloid-dependent neuronal impairment.
5. **Elena Tantillo (Scuola Normale and Pisa Science Foundation Onlus)** Bidirectional neuron-glioma interactions: effects of glioma cells on synaptic activity and its impact on tumor growth.
6. **Guido Marco Cicchini (IN CNR)** Plasticity in retinitis pigmentosa and retinal prostheses.

SESSION 4 ADDICTION AND BEHAVIOUR

1. **Liana Fattore (IN CNR)** A multidisciplinary approach to characterize the pharmacological and toxicological effects of the ketamine analog methoxetamine (MXE) in rats.
2. **Fabrizio Sanna (University of Cagliari)** Involvement of dopamine in the differences in sexual behaviour between Roman High and Low avoidance rats: behavioural, pharmacological and neurochemical findings.
3. **Nicholas Pintori (University of Cagliari)** Influence of JWH-018 repeated administration on the responsiveness of mesolimbic and mesocortical dopamine transmission to rewarding stimuli.
4. **Nicola Simola (University of Cagliari)** Rat 50-KHz ultrasonic vocalizations and glucocorticoid signaling: effects of corticosterone, mifepristone and metyrapone on calling initiation and on calling stimulated by social contacts or amphetamine.

SESSION 5 MISCELLANEA

1. **Simona Francia (IN CNR and VIMM)**. Role of the odorant receptor at the axon terminal.
2. **Eleonora Grespan (IN CNR)** Mechanisms of the impaired incretin action in type 2 diabetes: a modelling study.
3. **Clara De Palma (Ospedale Sacco Milano and IN CNR)** Autophagy controls neonatal myogenesis by regulating the GH/IGF1 system.

Poster Sessions

SESSION 1 THURSDAY 28 SEPTEMBER, 18:30-19:30

Theme A. Neurons, synapses, and glia: from physiology to pathology

P1. Involvement of TG2 in calcium homeostasis in rat primary hippocampal neurons.
C. Verderio, E. Tonoli, I. Prada, E. Verderio

P2. The innate immune molecule PTX3 enhances the synaptic content of AMPA receptors via extracellular matrix remodelling. *G. Fossati, D. Pozzi, A. Canzi, S. Valentino, E. Ghirardini, F. Mirabella, M. Moretti, G. Taraboletti, B. Bottazzi, C. Gotti, C. Garlanda, A. Mantovani, M. Matteoli, E. Menna*

P3. Chronic treatment with bifidobacterium (longum, breve, infantis) changes GABA_A subunit expression and excitability in the hippocampus of adult male rats. R. Mostallino, F. Biggio, G. Talani, V. Locci, L. Boi, E. Sanna, G. Biggio, M.C. Mostallino

P4. Astrocyte signaling in brain reward system. L.M. Requeie, M. Gomez-Gonzalo, G. Carmignoto

Theme B. Addiction, emotion and behaviour

P5. Brain changes in dopamine and serotonin levels in rats exposed to the activity-based model of anorexia nervosa. Brain changes in dopamine and serotonin levels in rats exposed to the activity-based model of anorexia nervosa. R. Collu, M. Scherma, E. Giunti, M. Deidda, W. Fratta, P. Fadda

P6. Intra-VTA microinjection of baclofen and CGP7930 suppresses alcohol self-administration in rats. P. Maccioni, I. Lorrai, A. Contini, G.L. Gessa, G. Colombo

P7. Alterations in 5alpha-reductase and neurosteroids in the prefrontal cortex mediate the psychotic- and mania-like phenotypes induced by sleep deprivation. F. Traccis, V. Bini, A. Soggiu, S. Scheggi, A. Pardu, S. Fanni, P. Roncada, M. Puligheddu, F. Marrosu, D. Caruso, P. Devoto, R. Frau, M. Bortolato

P8. Early life stress increases alcohol intake and impairs cognitive behavior in C57BL/6J mice: possible involvement of nucleus accumbens and hippocampal formation. G. Talani, G. Sarigu, F. Vedele, D. Colombo, E. Loi, R. Piras, E. Sanna

P9. Intravenous self-administration of the synthetic cannabinoid JWH-018 in adolescent mice. G. Margiani, M.P. Castelli, N. Pintori, P. Fadda, M.A. De Luca

P10. Novel targets and therapeutics for social impairments. M. Busnelli, F. Santini, G. Kleinau, M. Sala, D. Braida, M. Muttenthaler, S. Di Lascio, P.J. McCormick, M. Manning, G.E. Rovati, T. Bellini, B. Chini

P11. Chronic stress experienced by parents during adolescence can increase risk for autism spectrum disorder in offspring: a proposed animal model. M.G. Pisu, G. Boero, F. Biggio, M. Serra

P12. Chronic treatment with ethinyl estradiol and levonorgestrel blunts the response to stress in female rats. P. Porcu, A. Concas

Theme C. Neurodegenerative disorders, epilepsy and stroke

P13. Mouse models of polymicrogyria: pharmacological and cellular therapeutic approaches. S. Ferrara, G. Fossati, C. Zalfa, F. Antonucci, L. Ponzoni, M. Sala, A.L. Vescovi, M. Matteoli, E. Menna

P14. Exploring the role of astrocytic Ca²⁺ signaling in Alzheimer's disease. A. Lia, M. Zonta, A. Chiavegato, G. Losi, C. Fasolato, G. Carmignoto

P15. Pisa syndrome in a drug-naive Parkinson's disease patient. G. Orofino, P. Solla, A. Cannas, L. Polizzi, M. Meloni, F. Marrosu

P16. Transcriptional effect of the acetylcholinesterase donepezil on the human-restricted CHRFAM7A gene in immune and neuronal cell models: implications in the regulation of the $\alpha 7$ nAChR activity. R. Benfante, S. Di Lascio, A. Maroli, S. Cardani, M. Locati, L. Drufuca, D. Fornasari

Theme D. Mitochondria, muscle, metabolism

P17. Insulin clearance is independently modulated by insulin sensitivity, BMI and glucose tolerance. R. Bizzotto, A. Natali, A. Gastaldelli, R.A. De Fronzo, S. Arslanian, E. Ferrannini, A. Mari

P18. Beneficial and detrimental consequences of a primary increase in mitochondrial ROS formation on mitochondrial function, Ca^{2+} homeostasis and cardiomyocyte viability. S. Antonucci, R. Menabò, M. Di Sante, S. Deshwal, R.C. Hartley, T. Krieg, M.P. Murphy, F. Di Lisa

P19. MAO-dependent ER-mitochondria dysfunction and mast cell degranulation lead to adverse cardiac remodeling in diabetes. S. Deshwal, M. Forkink, C.-H. Hu, G. Buonincontri, S. Antonucci, M. Di Sante, R. Menabò, M.P. Murphy, N. Paolucci, D. Mochly-Rosen, T. Krieg, N. Kaludercic, F. Di Lisa

P20. The role of monoamine oxidases in differentiation and maturation of iPSC-derived cardiomyocytes. The role of monoamine oxidases in differentiation and maturation of iPSC-derived cardiomyocytes. M. Di Sante, S. Deshwal, S. Antonucci, C. Troiano, E. Greotti, D. Pendl, F. Di Lisa, N. Kaludercic

P21. Mitochondrial cAMP signalling is involved in metabolic flexibility. G. Di Benedetto, T. Pozzan

SESSION 2 FRIDAY 29 SEPTEMBER, 14:30-15:30

Theme A. Neurons, synapses, and glia: from physiology to pathology

P22. Endoplasmic reticulum Ca^{2+} handling proteins in zebrafish brain: a focus on calsequestrin. S. Furlan, S. Mosole, M. Campione, M. Murgia, P. Volpe, A. Nori

P23. In vitro characterization of miRNA-mediated control of Satb2 expression during corticogenesis. M. Martins, M. Terrigno, F. Cremisi

P24. Unveiling the mechanisms underlying oligodendrocyte differentiation: implications for Down syndrome myelination defects. A. Ulivi, V. Meraviglia, N. Colombo, M.P. Abbracchio, R. Bartesaghi, S. Ceruti, I. Prada, M. Pons Espinal, D. De Pietri Tonelli, R. Benfante, P. Rosa

P25. Altered migration of inhibitory interneurons in a mouse model of intellectual disability. A. Maset, L. Galla, C. Lodovichi

P26. Synaptic activity might represent a physiological tool to modulate glioma growth. A. Colistra, E. Vannini, L. Baroncelli, M. Costa, M. Caleo

Theme B. Addiction, emotion and behaviour

P27. Inhibition of N-acylethanolamine-hydrolyzing acid amidase suppresses nicotine-induced activation of mesolimbic dopamine transmission. M. Congiu, C. Sagheddu, S. Aroni, M. De Felice, M. Scherma, P. Fadda, A. Makriyannis, M. Malamas, M. Pistis

P28. Chronic synthetic cannabinoid WIN 55,212-2 administration induces neuromolecular changes and cross-sensitization behavioral effects to cocaine in adolescent rats. M. Deidda, P.A. Melas, M. Scherma, D.B. Kandel, E.R. Kandel, W. Fratta, P. Fadda

P29. Effect of exposure to the activity-based model of anorexia nervosa on liver of female rats. E. Giunti, G. Carta, A. Demurtas, R. Collu, M. Deidda, M. Scherma, W. Fratta, S. Banni, P. Fadda

P30. Maternal Δ^9 -Tetrahydrocannabinol biases dopamine system towards behavioral metaplasticity. C. Sagheddu, V. Miczan, S. Aroni, M. Congiu, R. Frau, I. Katona, M. Melis

P31. Oxytocin induces penile erection and yawning when injected into the bed nucleus of the stria terminalis: involvement of glutamic acid, dopamine and nitric oxide. J. Bratzu, F. Sanna, R. Bharatiya, A. Argiolas, M.R. Melis

P32. Adolescent alcohol exposure increases nicotine and cocaine reward only in rats genetically vulnerable to drugs of abuse. C. Cadoni, S. Corongiu, S. Fenu

P33. Mechanisms underlying the suppressing effect of COR659 on alcohol and chocolate self-administration. I. Lorrain, G. Colombo, M.A.M. Carai, G.L. Gessa, P. Maccioni

P34. Impaired fear response in pain insensitivity caused by NGF mutation. G. Testa, L. Pancrazi, F. Olimpico, C. Morelli, P. Heppenstall, M. Costa, A. Cattaneo, S. Capsoni

Theme C. Neurodegenerative disorders, epilepsy and stroke

P35. The 5 α -reductase inhibitor finasteride reduces dyskinesia in a rat model of Parkinson's disease. S. Fanni, R. Frau, P. Savoia, C. Fiorentini, F. Rossi, E. Tronci, F. Traccis, R. Stancampiano, M. Meloni, A. Cannas, F. Marrosu, M. Bortolato, P. Saba, C. Fidalgo, A. Pardu, C. Missale, P. Devoto, M. Carta

P36. Comparison of the efficacy of 5 α -reductase inhibitors on L-DOPA induced dyskinesia in a model of PD. F. Rossi, R. Frau, S. Fanni, E. Tronci, F. Traccis, R. Stancampiano, M. Bortolato, P. Saba, C. Fidalgo, A. Pardu, P. Devoto, M. Carta

P37. Metabolic alterations, cellular stress and neurodegenerative processes. S. Penati, N. Colombo, M. Matteoli, P. Rosa, M.L. Malosio

P38. Impact of acute-phase complications and interventions on 6-month survival after stroke. A prospective study. *A. Di Carlo, M. Baldereschi, M. Lamassa, B. Piccardi, M. Franceschini, F. Bovis, L. Cecconi, A. Biggeri, D. Inzitari, S. Ferro*

P39. GABAergic network activity and potassium elevations at the onset of seizure-like events in entorhinal cortex slices. *G. Losj, L. Librizzi, I. Marcon, M. Sessolo, P. Scalmani, M. de Curtis, G. Carmignoto*

P40. Calcitonin gene-related peptide (CGRP) acts as a homeostatic factor on microglial cells in experimental autoimmune encephalomyelitis. *S. Morara, I. Rossetti, A. Finardi, L. Zambusi, L. Provini, R. Furlan*

Theme D. Mitochondria, muscle, metabolism

P41. Mcu knock-down impairs skeletal muscle and motor neuron development in zebrafish embryos. *E. Lidron, S. Zanin, E. Moro, F. Argenton, R. Rizzuto, G. Pallafacchina*

P42. Induction of autophagy by the plant phenol pterostilbene: mechanisms and biomedical potential. *M. La Spina, M. Azzolini, M. Schiavone, G. Di Benedetto, M. Zoratti, L. Biasutto*

P43. PGE1 delivered by liposomes antagonized dendritic spine loss and reduction of VEGF and VEGF-R2 in frontal cortex and hippocampus of diabetic rats. *F. Cuccu, F. Biggio, V. Locci, L. Boi, M. Letizia Manca, A. M. Fadda, G. Biggio, M.C. Mostallino*

SESSION 3 SATURDAY 30 SEPTEMBER, 13:30-14:30

Theme A. Neurons, synapses, and glia: from physiology to pathology

P44. PCDH19 C-terminus is cleaved in response to NMDAR activation and homeostatically regulates IEGs. *L. Gerosa, F. Rusconi, L. Murru, A. Longaretti, E. Battaglioli, M. Passafaro, S. Bassani*

P45. Neuronal nicotinic acetylcholine receptors: new therapeutic targets of glioma and glioblastoma cells? *F. Fasoli, S. Pucci, V. Mucchietto, R. Benfante, S. Dilascio, M. Pallavicini, C. Bolchi, F. Clementi, C. Gotti*

P46. Glioblastoma exosomes shape tumor environment enhancing cancer cell invasiveness. *M. Tamborini, E. Vannini, L. Bello, G. Maira, M. Fornari, E. Setten, M. Locati, D. Sproviero, C. Cereda, L. Passoni, M. Matteoli*

P47. Liposomes treatment antagonized dendritic spine loss and reduction of neurogenesis in hippocampus of chronically stressed rats. *C. Porcedda, F. Biggio, L. Boi, V. Locci, G. Toffano, G. Biggio, M.C. Mostallino*

Theme B. Addiction, emotion and behaviour

P48. Gender differences in a new potent 5HT_{2A} agonist effects: neurochemical and behavioral studies after 25I-NBOME administration. N. Pintori, C. Miliano, G. Margiani, A. Ossato, S. Bilel, M. Marti, M.A. De Luca

P49. Gamma-hydroxybutyric acid induces changes in relative cerebral blood volume: a pharmacological magnetic resonance imaging study. A.L. Muntoni, H. Lu, C.A. Scholl, E.A. Stein

P50. Behavioral effects of the novel psychoactive substance (NPS) methoxetamine in rats. M.T. Zanda, S. Antinori, A. Mutti, L. Mancini, L. Padovani, P. Fadda, W. Fratta, C. Chiamulera, L. Fattore

P51. Anxiolytic effect of a standardized extract of *Salvia Miltiorrhiza* in rats. C. Lobina, M.A.M. Carai, G.L. Gessa, G. Colombo

P52. Behavioural and neurochemical changes induced by Δ^9 -Tetrahydrocannabinol in mice pre-exposed to nicotine. L. Ponzoni, D. Braida, M. Moretti, F. Clementi, M. Sala, C. Gotti

P53. Involvement of core clock genes in lithium response. C. Pisanu, D. Congiu, C. Melis, A. Angius, G. Severino, R. Arda, C. Chillotti, M. Del Zompo, A. Squassina

P54. Integrated analysis of converging genome-wide genotyping and transcriptomic data to identify genes associated with lithium response in bipolar disorder. C. Pisanu, D. Congiu, M. Costa, C. Chillotti, R. Arda, G. Severino, A. Angius, U. Heilbronner, L. Hou, F. J. McMahon, T.G. Schulze, M. Del Zompo, A. Squassina

P55. Heroin addiction and leukocyte telomere length. C. Melis, C. Pisanu, D. Congiu, E. Merkouri Papadima, A. Squassina, C. Chillotti, M.E. Stochino, M. Del Zompo

Theme C. Neurodegenerative disorders, epilepsy and stroke

P56. A novel therapeutic strategy for the prevention of the onset of dyskinesia in the therapy of Parkinson's disease. A. Pinna, G. Costa, L. Contu, M. Serra, N. Simola, M. Carta, M. Morelli

P57. LYS49 phospholipase A2 from *Bothrops asper* (Mt-II) forms cell surface amyloid-like structures that colocalize with nucleolin: a new functional amyloid? F. Tonello, M.L. Massimino, M. Simonato

P58. The Italian stroke-app: ICTUS 3R. M. Baldereschi, A. Di Carlo, B. Piccardi, D. Inzitari

P59. Development of a multiparametric prognostic index for determining rehabilitation outcome in stroke patients. M.L. Malosio, F. Davi, C.A. Elia, L. Straffi, S. Ghirmai, S. Marcheselli, L. Fontana B. Bernardini, L. Tenori, A. Mastropietro, C. Luchinat, M. Matteoli, G. Rizzo, M. Grimaldi

P60. A novel causative gene for autosomal dominant lateral temporal epilepsy (ADLTE). E. Dazzo, R. Michelucci, V. Vianello Dri, C. Boniver, P. Striano, C. Nobile

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