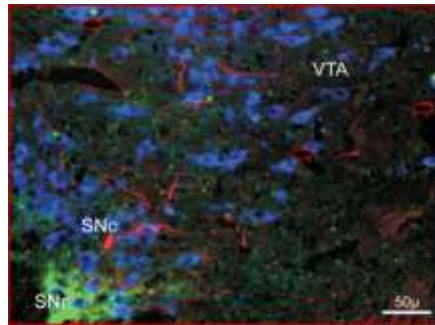




IN CNR Annual Retreat 2017
*Hotel Flamingo Resort,
 S. Margherita di Pula (CA)
 28-30 September 2017*



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 <i>Innovative technologies for neuroelectronic interfaces</i>
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
13:00-14:00	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 <i>What the genes tell us about our origins, evolutionary history and our current health</i>
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

Plenary Lectures

PL1 Annalisa Bonfiglio, *Department of Electrical and Electronic Engineering (DIEE), University of Cagliari, Italy*. Innovative technologies for neuroelectronic interfaces.

Host: Anna Lisa Muntoni

PL2 Francesco Cucca, *Institute for Genetic and Biomedical Research, CNR, Cagliari, Italy*. What the genes tell us about our origins, evolutionary history and our current health.

Host: Michela Matteoli

Training Course

IMAGING_CELL

TC1.1 Gian Michele Ratto (Italy), *Nanoscience Institute, CNR and NEST, Scuola Normale Superiore, Pisa*. A window with a view: order and chaos in the brain visualized by two photon microscopy.

TC1.2 Giorgio Carmignoto (Italy), *Neuroscience Institute (IN), CNR, Padova*. Optogenetic dissection of interneuron-type-specific signaling to astrocytes.

TC1.3 Tommaso Cerullo (Italy), *Leica Microsystems Srl, Life Science Research, Milano*. Diving in for deeper insights (20 min sponsor's talk).

IMAGING_NETWORK

TC2.1 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.

TC2.2 Federica Agosta (Italy), *Scientific Institute San Raffaele, Milano*. Neuroimaging insights into network-based neurodegeneration.

IMAGING_BRAINSTORMING

TC3 Letizia Allegra Mascaro (*IN CNR, Pisa*), Pietro Avanzini (*IN CNR, Parma*), Konstantinos Lefkimmiatis (*IN CNR, Padova*)

Oral Communications

SESSION 1 BRAIN CELL PHYSIOLOGY AND PATHOLOGY

Chairs: Matteo Caleo (Pisa), Mario Costa (Pisa)

OC1.1 Laura Restani (IN CNR) Beyond motoneurons: transynaptic action of BoNT/A at central cholinergic boutons.

OC1.2 Elisabetta Menna (IN CNR) The immune molecule PTX3 controls the trafficking of AMPA receptors at the synapse.

OC1.3 Irene Corradini (IN CNR and IRCCS Humanitas Milano) Maternal immune activation delays excitatory-to-inhibitory GABA switch in the offspring.

OC1.4 Marta Lombardi (IRCCS Humanitas Milano) Microglia-derived extracellular vesicles regulate the recruitment, proliferation and differentiation of oligodendrocyte precursor cells.

OC1.5 Patrizia Rosa (IN CNR) Unveiling the mechanisms underlying oligodendrocyte differentiation: implications for Down syndrome.

OC1.6 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

Chairs: Fabio Di Lisa (Padova), Michela Matteoli (Milano)

OC2.1 Silvia Bassani (IN CNR) The role of the female epilepsy protein PCDH19 between synapse and nucleus.

OC2.2 Kostantinos Lefkimmiatis (IN CNR) Using FRET-based sensors to study the cAMP/PKA axis at the outer mitochondrial membrane.

OC2.3 Elisa Greotti (IN CNR) mCerulean3-based Cameleon sensor to explore mitochondrial Ca²⁺ dynamics *in vivo*.

OC2.4 Pietro Avanzini (IN CNR) When timing matters: the mirror mechanism observed through the lens of intracerebral recordings.

OC2.5 Anna Letizia Allegra Mascaro (IN CNR) *In vivo* optical imaging of rehabilitation-induced cortical plasticity after stroke.

SESSION 3 NEURODEGENERATIVE DISEASES AND VISUAL SYSTEM

Chairs: Alessandro Sale (Pisa), Claudia Verderio (Milano)

OC3.1 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.

OC3.2 Giorgia Pallafacchina (IN CNR and University of Padova). Loss-of-function mutations in the *SIGMAR1* gene cause distal hereditary motor neuropathy by impairing ER-mitochondria tethering and Ca²⁺ signaling.

OC3.3 Giulia Costa (University of Cagliari) Long lasting neurotoxic effects of MDMA administration during adolescence.

OC3.4 Grazia Rutigliano (IN CNR and Scuola S. Anna Pisa) TAAR1 mediates the protective effect of 3-iodothyronamine against β -Amyloid-dependent neuronal impairment.

OC3.5 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.

OC3.6 Guido Marco Cicchini (IN CNR) Plasticity in retinitis pigmentosa and retinal prostheses.

SESSION 4 ADDICTION AND BEHAVIOUR

Chairs: Liana Fattore (Cagliari), Cecilia Gotti (Milano)

OC4.1 Liana Fattore (IN CNR) A multidisciplinary approach to characterize the pharmacological and toxicological effects of the ketamine analog methoxetamine (MXE) in rats.

OC4.2 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.

OC4.3 Nicholas Pintori (University of Cagliari) Influence of JWH-018 repeated administration on the responsiveness of mesolimbic and mesocortical dopamine transmission to rewarding stimuli.

OC4.4 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

Chairs: Claudia Lodovichi (Padova), Fiorella Tonello (Padova)

OC5.1 Simona Francia (IN CNR and VIMM). Role of the odorant receptor at the axon terminal.

OC5.2 Eleonora Grespan (IN CNR) Mechanisms of the impaired incretin action in type 2 diabetes: a modelling study.

OC5.3 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. Lorrain, A. Contini, G.L. Gessa, G. Colombo*

P7. Alterations in 5 α -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. Braidà, 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, Ca²⁺ 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. Penden, 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 Ca²⁺ 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, E. Espa, S. Fenu
- P33.** 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

P34. 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

P35. 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

P36. Metabolic alterations, cellular stress and neurodegenerative processes. S. Penati, N. Colombo, M. Matteoli, P. Rosa, M.L. Malosio

P37. 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

P38. GABAergic network activity and potassium elevations at the onset of seizure-like events in entorhinal cortex slices. G. Losi, L. Librizzi, I. Marcon, M. Sessolo, P. Scalmani, M. de Curtis, G. Carmignoto

P39. 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

P40. The Italian stroke-app: ICTUS 3R. M. Baldereschi, A. Di Carlo, B. Piccardi, D. Inzitari

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 5HT2A 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. 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*

P54. Differential responsiveness of nucleus accumbens dopamine to stimuli instrumentally conditioned to conventional or drug reinforcers. *A. Pisanu, D. Lecca, V. Bassareo, A. Sil, R. Frau, A. Scifo, G. Di Chiara*

P55. Involvement of core clock genes in lithium response. *C. Pisanu, D. Congiu, C. Melis, A. Angius, G. Severino, R. Ardau, C. Chillotti, M. Del Zompo, A. Squassina*

P56. 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. Ardau, G. Severino, A. Angius, U. Heilbronner, L. Hou, F. J. McMahon, T.G. Schulze, M. Del Zompo, A. Squassina*

P57. 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

P58. 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

P59. 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

P60. 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

P61. A novel causative gene for autosomal dominant lateral temporal epilepsy (ADLTE). E. Dazzo, R. Michelucci, V. Vianello Dri, C. Boniver, P. Striano, C. Nobile

Organized under the auspices of



Università di Cagliari



Sponsors



Consiglio Nazionale delle Ricerche
Dipartimento di Scienze Biomediche



From Eye to Insight

