June 4th - 6th 2014 Milazzo, Italy

3rd International Workshop on Synaptic Plasticity: from bench to bedside
Dear Colleagues and Friends,

We welcome you to the “3rd International Workshop on Synaptic Plasticity: from bench to bedside”.

The success of the first and second editions held in Taormina in 2010 and 2012 and the numerous unresolved issues in our complex field were strong arguments in favor of organizing a third edition of the Conference. This third edition will focus on rehabilitation in movement disorders and on maladaptive plasticity in Parkinson’s disease dealing with dyskinesia and impulse control disorders. In addition there will be a symposium dedicated to the role of cerebellum in basal ganglia disorders. An entire symposium will be dedicated to diffusion tensor imaging as a tool to monitor longitudinally structural plasticity in neurological diseases. Finally the last symposium will focus on the importance of cortical re-organizations in brain tumors and on how information can be used by neurosurgeons to plan and perform tumor excision.

The Congress Chairpersons
Paolo Girlanda and Angelo Quartarone
Congress Chairpersons
Paolo Girlanda (Messina, Italy)
Angelo Quartarone (Messina, Italy)

International Scientific Committee
Paolo Calabresi (Perugia, Italy)
Maria Felice Ghilardi (New York, USA)
Mark Hallett (Bethesda, USA)
John Rothwell (London, UK)

Faculty
Giovanni Abbruzzese (Genoa, Italy)
Yaniv Assaf (Tel-Aviv, Israel)
Alberto Bizzi (Rozzano, Italy)
Chiara Cirelli (Madison, Wisconsin, USA)
Christiaan I. De Zeeuw (Amsterdam, Netherlands)
Hugues Duffau (Montpellier, France)
Giuseppe Frazzitta (Gravedona, Italy)
Maria Felice Ghilardi (New York, USA)
Jean Antoine Girault (Paris, France)
Mark Hallett (Bethesda, USA)
Matilde Inglese (New York, USA)
Hyder Jinnah (Atlanta, USA)
Asha Kishore (Trivandrum, India)
Giacomo Koch (Rome, Italy)
Christian Luescher (Geneva, Switzerland)
Lucio Marinelli (Genoa, Italy)
Stefania Mondello (Messina, Italy)
Melissa Nirenberg (New York, USA)
Randolph J. Nudo (Kansas City, USA)
Walter Paulus (Göttingen, Germany)
Barbara Picconi (Rome, Italy)
Pietro Pietrini (Pisa, Italy)
Vincenzo Rizzo (Messina, Italy)
Paolo Maria Rossini (Rome, Italy)
John Rothwell (London, UK)
Thangavelu Soundara Rajan (Messina, Italy)
Francesco Tomasello (Messina, Italy)
Yoshikazu Ugawa (Fukushima, Japan)
Daniele Volpe (Verona, Italy)
Wednesday - June 4th, 2014

14.30-15.00 **Introduction, welcome and overview**  
*Paolo Girlanda, Angelo Quartarone (local organizers)*  
*Mark Hallet (co-organizer and Presidente of IFCN)*

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**Session 1**  
**Plasticity, movement disorders and rehabilitation**  
*Chairs: Giovanni Abbruzzese, Paolo Girlanda*

15.00-16.00 **Main Lecture**  
Plasticity and learning in Parkinson’s disease  
*Lucio Marinelli*

16.00-16.30 **Basic mechanisms of exercise in animal models of PD**  
*Maria Felice Ghilardi*

16.30-17.00 **Does rehabilitation improve plasticity in Parkinson’s disease?**  
*Giuseppe Frazzitta*

17.00-17.30 **Coffee break**

17.30-18.00 **Plasticity in dystonia: implication for rehabilitation?**  
*Giovanni Abbruzzese*

18.00-18.30 **Dystonia and rehabilitation**  
*Daniele Volpe*

18.30-19.00 **General discussion**

19.00-20.00 **Welcome cocktail**
**Thursday - June 5th, 2014**

Session 2  Maladaptive plasticity in PD: the cases of impulse control disorders (ICDs) and dyskinesia  
*Chairs:* Pietro Pietrini, Yoshikazu Ugawa

8.30- 9.30  Main Lecture  
Synaptic Plasticity and addictive behavior  
*Christian Luescher*

9.30-10.00  ICDs and plasticity: an overview  
*Pietro Pietrini*

10.00-10.30  ICDs in PD  
*Melissa Nirenberg*

10.30-11.00  Coffee break

11.00-11.30  Dyskinesia animal models  
*Barbara Picconi*

11.30-12.00  Dyskinesia in human PD: insight from TMS studies  
*Asha Kishore*

12.00-12.30  General discussion

12.30-14.30  Buffet lunch + Poster session I
Thursday - June 5th, 2014

Session 3  Neurooncology and plasticity
Chairs:      Alberto Bizzi, Francesco Tomasello

14.30-15.30 Main Lecture:
Cortico-cortical connectivity in brain tumors:
TMS and MEG studies
Paolo Maria Rossini

15.30-15.50 Sirtuin expression in human gliomas
Stefania Mondello

15.50-16.10 SIRT1 – BDNF pathway and synaptic plasticity in human gliomas
Thangavelu Soundara Rajan

16.10-16.30 Cortical plasticity in human gliomas:
an electrophysiological approach
Vincenzo Rizzo

16.30-17.00 Longitudinal MR imaging in patients with gliomas: a combined DTI and fMRI approach
Alberto Bizzi

16.50-17.15 General discussion

18.30-20.00 Visit to the Castle

21:00 Social Dinner
Session 4  
**Basic mechanisms and measures of structural plasticity**

*Chairs:* Walter Paulus, John Rothwell

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8.30-9.30  
**Main Lecture**

The fantastic plastic brain: basic mechanisms of structural plasticity

*Randolph J. Nudo*

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9.30-10.00  
**Watching the synaptic brain landscape changing in alive animals**

*Chiara Cirelli*

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10.00-10.30  
**How to explore structural plasticity in humans**

*Yaniv Assaf*

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10.30-11.00  
**Coffee break**

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11.00-11.30  
**Genetics, epigenetics and brain plasticity**

*Jean Antoine Girault*

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11.30-12.00  
**Structural plasticity in neurological diseases**

*Matilde Inglese*

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12.00-12.30  
**General discussion**

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12.30-13.30  
**Main Lecture:**

Brain hodotopy: from basic science concepts to surgical applications: a TMS study

*Hugues Duffau*

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13.30-15.00  
**Buffet lunch + Poster session II**
Friday - June 6th, 2014

Session 5  Cerebellar plasticity and movement disorders
Chairs:     Mark Hallett, Angelo Quartarone

15.00-16.00 Main Lecture
    The connections between cerebellum and basal ganglia
    Angelo Quartarone

16.00-16.30 Cerebellar plasticity and its contribution to motor learning
    Christiaan I. De Zeeuw

16.30-17.00 TMS: a tool for inducing cerebellar plasticity in humans?
    Giacomo Koch

17.00-17.30 Coffee break

17.30-18.00 Cerebellum and dystonia
    H.A. Jinnah

18.00-18.30 Cerebellum and PD
    Mark Hallett

18.30-19.00 General discussion and final remarks
Thursday - June 5th, 2014
Poster session 1

- P1- Aoi Ashizuka, Ryo Ishibashi, Hidenao Fukuyama, Tatsuya Mima. “Aphasia treatment using transcranial DC stimulation and repetitive transcranial magnetic stimulation (tDCS and rTMS) –A case study- “.


- P3-Francesco Di Lorenzo, Alessandro Martorana,Sonia Bonni et al. Cerebrospinal fluid levels of Tau determine neurophysiological heterogeneity in Alzheimer’s disease patients.

- P4-Cecilia Fontanesi ,Clara Moisello, Daniella Blanco et al. TMS enhances retention of a motor skill in Parkinson’s Disease.

- P5-Clara Moisello, Daniella Blanco, Cecilia Fontanesi, Simon P. Kelly, Alessandro Di Rocco, M Felice Ghilardi. Changes in beta modulation during prolonged motor practice are reduced in Parkinson’s Disease.

- P6- Giovanni Raffa, Alfredo Conti, Alessandro Calamuneri et al. Somatotopic nTMS-based tractography for a “functional” mapping of the cortico-spinal tract during surgery for motor area lesion.

- P7- Asha Kishore, Febina Backer, Praveen James, Traian Popa. Cerebellar sensory processing deficit in de novo PD and aging.

- P8- Massimiliano Gobbo. Timing-based rehabilitation as a novel approach to enhance post stroke care. a hypothesis.

- P9- Francesco Mori, Carolina G. Nicoletti et al. Cannabinoid CB1 receptor gene variants influence cortical plasticity and clinical response to physical therapy

- P10- Carolina G. Nicoletti, Francesco Mori ,Diego Centonze. CSF levels of RANTES are associated with enhanced synaptic excitability and plasticity in MS

- P11- Castagna A, Baglio F, Ramella M et al. Functional and structural connectivity changes in a case study with cervical dystonia treated with botulinum toxin and motor re-learning techniques.
Thursday - June 5th, 2014
Poster session 1

• P12- Veronica Ghiglieri, Fabrizio Cacace, Valentina Pendolino, Barbara Picconи and Paolo Calabresi. Recovery of corticostriatal plasticity and motor behavior in parkinsonian rats following theta-burst stimulation

• P13- Viviana Ponzo, Livia Brusa, Maria Stampanoni Bassi et al. Can theta burst stimulation of inferior frontal gyrus reduce Levodopa-induced dyskinesias?

• P14- Hanna Iderberg, M Angela Cenci. Evaluation of potential treatments in different rat models of dopamine receptor-dependent dyskinesias in Parkinson’s disease.


• P17- Lilla Bonanno, Demetrio Milardi, Francesca Granata et al. Evaluation the microstructural changes in a case of glioma: a Diffusion Tensor Imaging study.

• P18- Fabrizia Caminiti, Rosella Ciurleo, Simona De Salvo et al. Psychophysical, electrophysiological and neuroradiological assessment of olfactory function in a case of congenital triventricular hydrocephalus with anosmia

• P19- Simona De Salvo, Fabrizia Caminiti, Lilla Bonanno, et al. Emotion perception and consciousness in vegetative and minimally conscious state patients

• P20- Viviana Lo Buono, Francesco Corallo, Maria Cristina De Cola, et al. Effects of cognitive rehabilitation after removal of astrocytoma: a case report

• P21- Domenica Nunnari, Lilla Bonanno, Placido Bramanti, Silvia Marino. DTI and neuropsychological assessment in aphasis stroke
Friday - June 6th, 2014

Poster session 2

• P1- Yusuke Mikami, Tatsuya Mima, Masao Matsuhashi, Hidenao Fukuyama. Decreasing trend of human cortical-muscular coherence after anodal transcranial dc stimulation

• P2- Satoko Koganemaru, Yusuke Mikami, Hidenao Fukuyama, Tatsuya Mima. The enhancement of motor cortical inhibitory circuits governing foot extensors by gait combining rhythmic brain stimulation simulating gait cycle


• P5- Vishal Rawji, Matteo Ciocca, André Zacharia, John Rothwell. Investigating the effect of current flow on cortical excitability using bipolar tDCS

• P6- Walter Gulisano, Daniela Puzzo, Antonella Bizzoca, et al. The cell adhesion molecule f3/contactin improves synaptic plasticity and memory in aged mice.

• P7- Silvia Picazio, Domenica Veniero, Viviana Ponzo, et al. Reverberant cortico-cortical interactions in early phases of movement inhibition.

• P8- Sonia Bonni, Domenica Veniero, Chiara Mastropasqua et al. TMS evidence for a selective role of the precuneus in source memory retrieval.

• P9- E. Raffin, A. Thielscher, H. Siebner. Immobilization of adjacent fingers enhances motor learning and results in a specific changing pattern of muscles representations


• P12- Rajan TS, Naro A, Cuzzocrea S, et al. Dysregulated expression of synaptic plasticity markers CaMKIIα and CREB in human transgenic DYT1 rats and a high-frequency repetitive transcranial magnetic stimulation approach to reverse the plasticity abnormalcy: a preliminary report.

• P13 E. Mormina, A. Arrigo, A. Calamuneri, et al. Diffusion tensor MRI changes of Cerebellar Hemispheres in Parkinson’s disease

• P14 Demetrio Milardi, Michele Gaeta, Silvia Marino, et al. New insight into basal ganglia connectome by constrained spherical deconvolution tractography: a novel superdirect pathway?

• P15 Alessandro Arrigo, Michele Gaeta, Giuseppe, et al. A new insight by Constrained Spherical Deconvolution into limbic network in human, with emphasis on direct cerebello-limbic pathway

• P16- Alessandro Calamuneri, Enrico Mormina, Alessandro Arrigo, Angelo Quartarone. Comparison of two interpolation methods for diffusion tensor features extraction in an hybrid Tract Based Analysis framework

• P17- Rossella Maggio, Carmen Terranova, Vincenzo Rizzo, Flavio Angileri, Alfredo Conti, Antonino Germanò, Paolo Girlanda, Francesco Tomasello and Angelo Quartarone. Preoperative Functional Mapping for Rolandic Brain Tumor Surgery: state of art and one year personal experience.

• P18- Margherita Russo, Francesca Morgante, Antonino Naro, et al. Normal sensori-motor plasticity in complex regional pain syndrome type I with fixed posture of the hand: implications in pathophysiology

• P19- Antonino Naro, Mohamed M Abdel Kader, Margherita Russo et al. A local signature of LTP-like plasticity induced by repetitive paired associative stimulation

• P20- Antonino Naro, Margherita Russo, Carmen Terranova et al. Neurophysiological and kinematic factors associated with symptoms spreading in adult focal dystonias

• P21- Giuseppe Frazzitta, Roberto Maestri, Giulio Riboldazzi, Gabriella Bertotti, Gianni Pezzoli, M. Felice Ghilardi. Intensive rehabilitation treatment improves sleep quality in Parkinson’s disease
GENERAL INFORMATION

Congress Venue:
Eolian Hotel Milazzo
Salita dei Cappuccini, 21/23
98057 Milazzo (Me)
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Official Language:
The Workshop will be conducted in English.

Certificates of Attendance:
Certificates of attendance will be available on request at the end of the Workshop at the Registration Desk.

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