

Con il patrocinio di:



FONDAZIONE
NEURONE onlus

Viale Regina Margherita, 169
00198 Roma, ITALY
Tel: (+39)06 8841033
Email: info@fondazioneneurone.it
Web: www.fondazioneneurone.it



Wadsworth Center

New York State Department of Health

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Via Monte Zebio, 9
00195, Roma
Tel. +39 06 89011781
Fax +39 06 94443440
info@morecomunicazione.it
morecomunicazione.it



International Workshop



NEW FRONTIERS IN NEUROTECHNOLOGY

Clinical and experimental realms

September 12 - 13, 2014
Naples, Italy

Complesso dei SS. Marcellino e Festo
Largo S. Marcellino, 10

Scientific Committee

Gerwin Schalk, PhD

Research Scientist

Division of Translational Medicine

Wadsworth Center

Associate Professor

Department of Neurology

Albany Medical College

Anthony Ritaccio, MD, FAAN, FANA

Professor of Neurology and Neurosurgery

Department of Neurology

Albany Medical Center

Albany, New York, USA

Febio Cincotti, PhD

Research Scientist

Neuroelectrical Imaging and BCI Laboratory

Fondazione Santa Lucia IRCCS, Rome, Italy

Department of Computer, Automatic and

Management Engineering

Sapienza University of Rome, Italy

Donatella Mattia, PhD

Research Scientist

Neuroelectrical Imaging and BCI Laboratory

Fondazione Santa Lucia IRCCS, Rome, Italy

Workshop Organization

Giulio Nicolò Meldolesi, MD

Fondazione Neurone, Rome, Italy

Fabio Sebastiano, PhD

Neuromed IRCCS, Pozzilli (IS), Italy

Antonio Sparano, MD

Neuromed IRCCS, Pozzilli (IS), Italy

Giancarlo Di Gennaro, MD

Neuromed IRCCS, Pozzilli (IS), Italy

Faculty

Giuliano Avanzini

Department of Neurophysiology and
Epilepsy Unit

Fondazione IRCCS Istituto Neurologico

Carlo Besta, Milan, Italy

Gerwin Schalk, PhD

Research Scientist

Division of Translational Medicine

Wadsworth Center

Associate Professor

Department of Neurology

Albany Medical College

Albany, New York, USA

Peter Brunner, PhD

Assistant Professor

Department of Neurology

Albany Medical College

Albany, New York, USA

Luciano Fadiga, MD

Professor of Human Physiology

University of Ferrara, Italy

Robert T. Knight, MD

Professor of Psychology and Neuroscience

UC Berkeley

Berkeley, CA, USA

Angela Riccio, PhD

Neuroelectrical Imaging and BCI Laboratory

Fondazione Santa Lucia IRCCS, Rome, Italy

Sapienza University of Rome, Italy

Claudia Sannelli, PhD

Research Associate

Department of Software Engineering and

Theoretical Computer Science

Technical University, Berlin, Germany

Francesca Schettini, PhD

Neuroelectrical Imaging and BCI Laboratory

Fondazione Santa Lucia IRCCS, Rome, Italy

Department of Computer Science and Systems

Sapienza University of Rome, Italy

Alessandro Vato, PhD

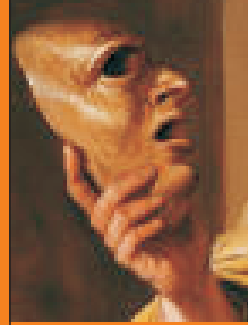
Researcher

Center for Neuroscience and Cognitive

Systems

Fondazione Istituto Italiano di Tecnologia,

Rovereto, Italy



NEW FRONTIERS IN NEUROTECHNOLOGY

Clinical and experimental realms

Neurotechnology is poised to become one of the most exciting new areas of the 21st century.

Neurotechnologies integrate advanced methods in electrical engineering and computer science with current understanding in neuroscience and neurophysiology to produce new devices that can diagnose, cure or alleviate disorders of the nervous system.

Current work in this area centers on development of new devices that can interact with the nervous system, on new mathematical or software techniques that enable or facilitate this interaction, and on achieving a refined understanding of the physiological basis of normal and abnormal function.

This work is making great strides toward the design and implementation of a new generation of devices that can:

- 1) restore or augment sensory function (e.g., cochlear or retinal implants) or motor function (e.g., brain-computer interfaces for people with severe paralysis or neurorehabilitation for people with stroke);
- 2) diagnose normal or abnormal brain function (e.g., real-time functional brain mapping); or
- 3) cure or alleviate symptoms of disease (e.g., deep brain stimulation to treat tremor in patients with Parkinson's disease).

This two-day workshop highlights scientific, engineering, and clinical aspects of this exciting new area.

It is presented by leading experts from the United States of America, Germany, and Italy, and features theoretical lectures as well as practical tutorials with brain-computer interfaces that allow people to control devices using brain signals.

The purpose of this workshop is to bring together experts in this emerging field, and to communicate the exciting prospects of this area.

Friday, September 12, 2014

- 08:30a - 08:50a **Ceremonial speakers**
- 08:50a - 09:00a **Keynote introduction**
Gerwin Schalk
Wadsworth Center, Albany, New York, USA
- 09:00a - 9:45a **Insights into human cognition from electrocorticography**
Robert Knight
University of California, Berkeley, USA
- 10:00a - 10:45a **Functional brain mapping: from active to passive**
Anthony Ritaccio
Albany Medical College, Albany, New York, USA
- 11:00a - 11:45a **Interfacing sensorimotor brains**
Luciano Fadiga
University of Ferrara, Italy
- 12:00p - 12:45p **Bidirectional brain-computer interfaces**
Alessandro Vato
Fondazione Istituto Italiano di Tecnologia, Rovereto, Italy
- 01:00p - 02:00p Lunch
- 02:00p - 02:45p **Physiological basis for brain-computer interactions**
Febo Cincotti
University of Rome, Italy
- 03:00p - 03:45p **Technical basis of brain-computer interactions**
Peter Brunner
Wadsworth Center, Albany, New York, USA
- 04:00p - 04:45p **Clinical demands for brain-computer interactions**
Donatella Mattia
Fondazione Santa Lucia, Rome, Italy
- 05:00p - 05:45p **Presentation of demo stations**
(robotic arm, BCI2000 demo station, neurorehab, etc.)

Saturday, September 13, 2014

- 08:50a - 09:00a **Keynote introduction**
Anthony Ritaccio
Albany Medical College, Albany, New York, USA
- 09:00a - 09:45a **Keynote address**
Giuliano Avanzini
IRCCS Istituto Neurologico Carlo Besta, Milan, Italy
- 10:00a - 10:45a **Opportunities of merging brains with machines**
Gerwin Schalk
Wadsworth Center, Albany, New York, USA
- 11:00a - 11:45p **The inefficiency problem for motor-imagery brain-computer interfaces**
Claudia Sannelli
Technical University of Berlin, Germany
- 12:00p - 01:00p Lunch
- 01:00p - 02:00p **Poster session, poster award**
- 02:00p - 02:30p **Practical tutorial on brain signal recording techniques**
Angela Riccio
University of Rome, Italy
- 02:30p - 05:30p **Practical sessions**
These practical sessions allow participants to control a computer using brain signals alone
Francesca Schettini
University of Rome, Italy
- 05:30p **Social event**



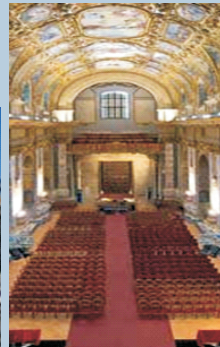
Congress Venue

CONGRESS CENTER FEDERICO II

The Congress Centre of the University of Naples Federico II arises from the increasing demand on the part of individuals inside and outside the University, to use some historic venues for the organization of events. Important structures such as the complex of SS. Marcellino e Festo, thanks to significant restoration works, have been recovered to their former glory.

The Church of the Monastery of Saints Marcellino and Festo is the most valuable part of the great convent, awarded in 1907 at the University of Naples and now completely restored.

Today, the structure consists of a hall with 160 seats.



Location:
largo S. Marcellino, 10
Naples



HOTEL



Costantinopoli 104

Via Santa Maria di Costantinopoli, 104

Walking distance to the Congress Venue (900mt)



Hotel Piazza Bellini

Via Santa Maria di Costantinopoli 101

Walking distance to the Congress Venue (900mt)

SURROUNDING...

San Severo Chapel

The Sansevero Chapel Museum in the historic heart of Naples is a jewel of the world's artistic heritage. Here, baroque creativity, dynastic pride, beauty and mystery blend to create a unique and almost timeless atmosphere.



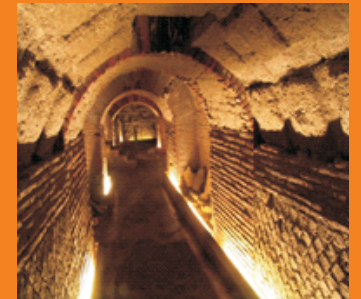
Santa Chiara Complex

Set in the historical centre of Naples, near via Santa Chiara, in the area of Piazza del Gesu' and close to San Domenico Maggiore, the Complex is inside the Franciscan citadel and includes the Museum, the Archaeological Area, the Majolica-tiled Cloister, and the collection of Nativity Scenes (also known as Christmas Cribs) from the 1700s.



Naples Underground

Forty meters below the characteristic and lively streets of the Historic Center of Naples, you find a different world, unexplored, isolated by time, but deeply connected with the world above. It's the heart of Naples, and the place from which the city was born. To visit it is to travel to the past, a world 2400 years old.



San Gregorio Armeno

Via San Gregorio Armeno is the famous street of the artisans of the nativity scene, famous throughout the world for its numerous craft dedicated to the art nativity. The street and shops can be visited throughout the year and so the visitor is led back each time to the magical Christmas atmosphere.

