



ELCHE, SPAIN, SEPT 15 - 20, 2013

Research surrounding the assessment and management of recovery after neural damage is a constantly evolving area that today requires the early convergence of clinical and technical perspectives.

The 2013 Summer School on Neurorehabilitation (SSNR2013) "Engineering for Clinical Practice" will provide in depth education on advanced procedures for neurorehabilitation of motor dysfunction following stroke, spinal cord injury, cerebral palsy and other neurological conditions, covering practical applications based on neuroprosthetics, robotic interfaces and other combinational approaches.

SSNR2013 aims at a thorough understanding of the underlying mechanisms of the motor dysfunction and its recovery according to strong theoretical foundations and thus will be focused on providing a critical view of current techniques and the key need for future developments.

PLENARY LECTURES

The 2013 Summer School provides close contact with leading experts in the following topics:

- Motor dysfunction after CNS disorders
- Gait retraining following neurological injury
- Motor learning approaches
- Physical human robot interaction
- Assessment and treatment of spasticity
- Neuromodulation of the spinal circuitry
- BCIs and rehabilitation

HANDS-ON WORKSHOPS

The students will gain unique insight and detailed knowledge by completing practical workshops focused on challenging and controversial issues, with hands-on exercises:

- **Multi-channel surface EMG**
Organizers: R. Merletti, D. Farina
- **Human neuromusculoskeletal modelling**
Organizers: M. Sartori, M. Reggiani, J. Moreno
- **Muscle synergies: looking into the CNS**
Organizers: D. Torricelli, M. Molinari, A. d'Avella, Y. Ivanenko
- **BCIs for training and assessment**
Organizers: GTEC
- **In-vivo clinical assessment & intervention**
Organizers: A. Gil
- **Rehabilitation Robotics**
Organizers: A. Casals, J. Aranda

PLENARY SPEAKERS

- Metin Akay
University of Houston, USA
- W. Zev Rymer
Northwestern University, Chicago, USA
- Thomas Sinkjær
Danish Natl. Research Foundation, Denmark
- Volker Dietz
Balgrist University Hospital, Switzerland
- Grégoire Courtine
Ecole Polytechnique Federale de Lausanne (EPFL)
- Dejan Popovic
University of Belgrade, Serbia & Aalborg University, DK
- Paolo Bonato
Spaulding Rehabilitation Hospital, Boston, USA
- Ales Holobar
University of Maribor
- Robert Riener
Swiss Federal Institute of Technology, Switzerland
- Emilio Bizzi
Massachusetts Institute of Technology, USA
- Arthur Prochazka
University of Alberta, Canada
- Dario Farina
University of Göttingen, Germany
- Elan D. Louis
Columbia University Medical Center
- Jonathan R. Wolpaw
Wadsworth Center, New York State Dept of Health