

9th Federation European Neurosciences Societies (FENS) Forum of Neuroscience
July, 4th 2014

Satellite Symposium of the European Sleep Research Society
"Understanding Sleep: novel perspectives in Neurosciences"



8.30-10.00 Understanding Sleep Functions

Chairs: Philippe Peigneux, Lino Nobili

Tarja Porkka-Heiskanen: Sleep regulatory factors

Roberto Amici: Sleep and bodily functions

Philippe Peigneux: Sleep and memory: emerging concepts and new approaches

10.00-11.30 The impact of sleep deprivation on human-health

Chairs: Luca Imeri, Tarja Porkka-Heiskanen

Luca Imeri: The link between sleep and immune response

Peter Meerlo: Metabolic and neurobiological consequences of chronically disrupted sleep

Nicola Montano: Short and long-term effects of sleep deprivation on the autonomic control

11.45-13.15 REM sleep alterations and brain diseases

Chairs: Pierre-Hervé Luppi, Raffaele Manni

Mayumi Kimura: REM sleep alterations and depression

Pierre-Hervé Luppi: Animal models of REM dysfunctions: what they tell us about the cause of narcolepsy and Rapid Eye Movement (REM) behavior disorder.

Luigi Ferini-Strambi: Rapid Eye Movement (REM) behavior disorder as a marker of degenerative disorders

14.30-16.00 Global and local regulation of sleep

Chairs: Marcello Massimini, Vlad Vyazovskiy

Maurizio Mattia: Cellular and network mechanisms of sleep slow oscillations

Vlad Vyazovskiy: Local and global dynamics of brain activity during sleep

Simone Sarasso: Coupling and uncoupling of cortical and sub-cortical activity during human sleep



Location: Palazzo Pirelli, Sala Gonfalone, Via Fabio Filzi, 22, Milano.

Short description, topic and purpose

Sleep is a fundamental biological function, crucial for physical and mental health. However, we still don't know what sleep is for. Sleep has been identified as a state able to optimize the consolidation of newly acquired information in memory, but the reasons for this are still a mystery. Performances, skills, immune and vegetative functions are deeply impaired after sleep loss, but we still don't know which are the substrates of this impairment at brain level.

Traditionally, sleep has been considered as a global behavioral phenomenon, orchestrated by central specialized neuronal networks modulating the whole-brain activity; nevertheless, recent studies suggest that sleep might be regulated at a local level in the brain. Finally, very recent intracerebral electrophysiological studies in humans have also shown that sleep and wakefulness are not mutually exclusive; the human brain can be characterized by the coexistence of wake-like and sleep-like activities in different cortical areas. These observations open new perspectives in the interpretation of the substrates underlying behavioral states of vigilance.

Aims of the symposium is to give an overview of the recent research on the physiological basis of the nature of sleep and its functions and on the consequences of sleep deprivation and sleep alterations on brain and bodily functions. Due to the integrated multidisciplinary approach the symposium may be of interest for neuroscientists from within and outside the sleep research community.

Speakers:

Philippe Peigneux: Neuropsychology and Functional Neuroimaging Research Unit, Université Libre de Bruxelles. Bruxelles, Belgium

Tarja Porkka-Heiskanen: Institute of Biomedicine/Physiology. Biomedicum Helsinki, University of Helsinki, Finland.

Roberto Amici: Department of Biomedical and NeuroMotor Sciences - Physiology, Alma Mater Studiorum, University of Bologna, Italy

Peter Meerlo: Department of Behavioral Physiology, Center for Behavior and Neurosciences, University of Groningen, the Netherlands

Luca Imeri: Department of Human Physiology and Giuseppe Moruzzi Centre for Experimental Sleep Research, University of Milan Medical School, Milan, Italy.

Nicola Montano: Division of Medicine and Pathophysiology, Department of Biomedical and Clinical Sciences "L. Sacco," L. Sacco Hospital, University of Milan Milan,

Mayumi Kimura: Max Planck Institute of Psychiatry, Munich, Germany.

Pierre-Herve Luppi: INSERM, CNRS, Lyon Neuroscience Research Center, University Lyon 1, Lyon, France

Luigi Ferini-Strambi: Sleep Disorders Center, Università Vita-Salute San Raffaele, Milan, Italy.

Maurizio Mattia: Istituto Superiore di Sanità, ISS, Roma, Italy.

Vlad Vyazovskiy: Department of Physiology, Anatomy and Genetics, The University of Oxford, Oxford, UK.

Simone Sarasso: Department of Biomedical and Clinical Sciences 'Luigi Sacco', University of Milan, Milan, Italy.

