

<b>Brain in Pain</b>	<b>6 hours Credits: 2</b>
<b>Proponent:</b> Riccardo Torta	
<b>Location:</b> Aula Magna AOU, Città della Salute e della Scienza	
<b>Dates:</b> November 17, 2017 (h 9:00 – 13:30)	
<p><b>Program:</b> Pain is a frequent complaint in medical and surgical conditions. In the past decade it has become clear that pain is not only a symptom, but can become a disease on itself. Understanding how pain may become chronic is important as chronic pain severely affects peoples' daily life and the consequences are a financial burden for society. The aim of this symposium is to bring together clinical and basic researchers in the field of pain to: i) share their expertise and the progress made in their different fields regarding the mechanisms underlying pain, pain modulation and pain chronification; ii) discuss current efficacy in treating this pain, and, iii) foster an open and critical discussion with the ultimate aim of raising addressing unresolved questions. The symposium will be tailored for both a general audience including graduate and postgraduate students of Medicine and Psychology, and a more specific audience of specialists operating in basic and clinical pain research.</p>	

<b>2nd International NeuronLine Conference: Frontiers in Neuroscience Teaching &amp; Research</b>	<b>8 hours Credits: 4</b>
<b>Proponents:</b> Silvia De Marchis, Isabelle Perroteau	
<b>Location:</b> Aula Magna Rettorato, Via Verdi 8	
<b>Dates:</b> November 24, 2017 (h 9:00 – 17:00)	
<p><b>Program:</b>  Advances in Neuroscience Teaching: The Euro-Mediterranean Master of Neuroscience on-line  Advances in Neuroscience Research: From molecules to behaviour in physiology and pathology  Stem cells, neurodegenerative diseases and repair</p>	

## **“NEUROBIOLOGICALLY BASED” PSYCHOLOGICAL TREATMENTS OF TRAUMAS AND DEPRESSION**

**10 hours Credits: 5**

**Teachers:** Luca Ostacoli

**Location:**

**Dates:**

January 25, 2018 (h 8:30 – 13:30) - Ospedale Molinette, Psicologia Clinica ed Oncologica, Sala Baldacci

January 31, 2018 (h 8:30 – 13:30) - Aula C di Anatomia, Corso Massimo d' Azeglio , 52

**Program:** There is an evident relationship between both psychic and physical diseases and past traumatic events: every life event may become “traumatic” when overcomes the person’s coping skills and leads to pathogenic memories. Life events may precipitate the onset of the disease and its evolution; major adverse childhood experiences, such as abuse or domestic violence, increases the risk to develop both psychic disorders and medical illnesses such as heart disease, cancer, stroke, diabetes and liver disease. The research findings suggest that the impact of negative childhood experiences on adult health is strong and cumulative. Stressful and traumatic memories may affect the doctor patient communication, relapses with reduction of functionality, side effects of therapies, diagnostic procedures, fear for the future, and future controls. Attachment unresolved issues affect therapeutic alliance with medical teams and reduce compliance to both diagnostic exams and therapies. As a whole, the presence of unresolved traumas affects greatly the prognosis of any disorder. A great deal of research focused on trauma and today the knowledge of its pathophysiology allows new possibilities of treatment, leading to the new field of the neurobiologically based therapies.

In the course will present some of the findings choosing those linked more directly to the clinical process of treatment. Particular emphasis will be paid to the close connection between Brain and Heart, that is between Central and Autonomic Nervous System in affective processing and in relational engagement. Porges’ Polyvagal Theory is widely used as a functional model of autonomic arousal but its efficacy can be improved integrating it with new models of Central Nervous System processing, offering a great opportunity to personalize both treatment planning and real time management. Richard Davidson, an international renowned neuroscientist, identified six neurobiologically grounded "Emotional Styles", reflecting activity levels in specific and identifiable brain circuits, each affecting the processing of sensorial, emotional and relational inputs and behaviours. Neurobiological Emotional Styles cut across diagnostic categories of mental disorders and Davidson’s studies show the possibility to modulate the brain circuits functioning through specific psychological practices. Over the last years we developed a model which integrates the classic conceptualization of cases and treatments with Porges and Davidson’s work in order to customize therapies according to individual Central and Autonomic Nervous System Profile.

As an artist can play his best music only if he exploits the features of his musical instrument, so we believe that Neurobiologically Targeted approaches could increase greatly the effectiveness of treatments.

**Understanding autisms: from cognitive models to robot-mediated applications**  
**15 hours Credits: 7**

**Teachers:** Caterina Ansuini (IIT)

**Location:** Room 12, Corso San Maurizio 31/a

**Dates:**

February 13, 2018 (h 14 – 17)

February 20, 2018 (h 14 – 17)

February 27, 2018 (h 14 – 17)

March 6, 2018 (h 14 – 17)

March 13, 2018 (h 14 – 17)

**Program:** The course will cover the following areas:

- An introduction to epidemiology, diagnostic criteria, tools for Diagnosis, comorbidity, evidence-based therapeutic approach, the importance of an early diagnosis (Lesson I);
  - Cognitive and neuropsychological models - Theory of Mind, 'Mirror' hypothesis, Weak Central Coherence' theory (Lesson II);
  - Studies related to perception, attention, and executive functions in autism: paradigms and main results (Lesson III);
  - Studies related to motor cognition and movement deficits in autism: paradigms and main results (Lesson IV);
- Social-assistive robotics approach to autism. Why autistic kids 'like' robots? State of the art and future prospective in the SAR field for autism (Lesson V).

At the end of each lesson, PhD students will be involved into an active learning exercise related to a 'hot topic' in the autism research field (e.g., Behavioural measure and early diagnosis in autism; Autism and biomarkers; Autism and ADHD: comorbidity or continuum?).

<b>Spino-cerebellar ataxias (SCA)</b>	<b>6 hours Credits: 3</b>
<b>Teachers:</b> Filippo Tempia, Eriola Hoxha, Alfredo Brusco	
<b>Location:</b> Physiology, room B, Corso Massimo d'Azeglio 50	
<b>Dates:</b> February 23, 2018 (h 9:30 – 11:30) February 26, 2018 (h 9:30 – 11:30) February 27, 2018 (h 9:30 – 11:30)	
<b>Program:</b> SCAs are a heterogeneous group of autosomic dominant neurologic diseases, in which the main clinical finding is ataxia associated with cerebellar hypotrophy. The pathophysiology of SCAs is due to a variety of mechanism, including polyglutamine expansion and missense mutations. Recently, some aspects of the pathogenic mechanisms began to be discovered. However, no cure is currently available. The first lesson will illustrate the genetics of SCAs, including the mechanisms of poliglutamine expansion and conventional mutations The second and third lesson will provide more in depth information about the mechanisms emerging from recent discoveries and ongoing research.	

<b>The Brain in Extreme Environments</b>	<b>16 hours Credits: 8</b>
<b>Teachers:</b> Fabrizio Benedetti	
<b>Location:</b> Plateau Rosà, Breuil-Cervinia	
<b>Dates:</b> Jan-Feb 2018	
<b>Program:</b> This is an on-field and interactive course at the Center for Hypoxia of the Plateau Rosa Laboratories (Italy/Switzerland), located at an altitude of 3500 m. It is aimed at showing the brain responses to an extreme environment such as hypoxia and low temperature. We will show how brain activity and different physiological functions can be monitored in extreme and unusual conditions, such as those occurring in polar expeditions and space exploration. In particular, it will be shown how the four critical life functions (ventilation, oxygenation, circulation, perfusion) are controlled by the brain and by different psychological factors. Both skiers and non-skiers are welcome. The former will participate in outdoor skiing activity, the latter in indoor activity in the labs. Those students who already participated last year are also welcome, and they will be involved in new activities and projects.	

<b>Reasoning</b>	<b>6 hours Credits: 3</b>
<b>Teachers:</b> Monica Bucciarelli	
<b>Location:</b> Aula Seminari, Dept. of Psychology, via Verdi 10	
<b>Dates:</b> May 29 and May 30, 2018 (h 9 – 12)	
<p><b>Program:</b>  The course will deal with reasoning processes, both automatic and deliberate, underlying the inferences we make in everyday and scientific research contexts. It will be concerned with deduction and induction, as well as abduction, namely the classical method used in scientific research with the aim to infer the causes from the effects and build theories. Also, the course will deal with typical reasoning errors, with reference to biases and heuristics. The awareness of the processes underlying reasoning and of the influencing factors is particularly relevant to reason correctly from the methodological point of view in the scientific domain.</p>	

<b>New trends for food/wine in cognitive neuroscience: behavioural and neurophysiological approaches</b>	<b>12 hours Credits: 6</b>
<b>Teachers:</b> Anna Berti, Raffaella Ricci	
<b>Location:</b>	
<p><b>Dates:</b>  Anna Berti  September 18, 2018 (h 14 – 17) AULA H Plana  September 19, 2018 (h 10 – 13) AULA H Plana</p> <p>Raffaella Ricci  September 25, 2018 (h 10 – 13) SALA LAUREE Palazzo Badini, via Verdi, 10  September 26, 2018 (h 14 – 17) SALA LAUREE Palazzo Badini, via Verdi, 10</p>	
<p><b>Program:</b> The course is aimed at providing the students with advanced theoretical and methodological knowledge on food/wine cognitive neuroscience, a topic that has become more and more studied in this last decade. The course will focus on new perspectives and research approaches that have been proposed to understand how the brain responds and guides behavior in response to food/wine cues. In particular, it will explore the contribution of neuroimaging (EEG and fMRI) and non-invasive brain stimulation investigation together with recently published behavioural and neuropsychological studies, whose content shed light on the relation between food/wine behaviour and other aspects of homeostatic/hedonic mechanisms. We shall critically discuss with the students the state of the art and we shall try to induce new thoughts and proposals in order to find innovative lines of research. Possible practical implementation of the food/wine research, that may interest specialised stakeholders for improving food/wine understanding and consume, will be also discussed.</p>	

<b>Neuromuscular disorders and ALS: from phenotypic complexity to innovative therapies</b>	<b>12 hours Credits: 6</b>
<b>Teachers:</b> Adriano Chiò, Tiziana Mongini	
<b>Location:</b> TBD	
<b>Dates:</b> TBD	
<b>Program:</b> <ol style="list-style-type: none"> <li>1. ALS as a model of phenotypic complexity (Adriano Chiò)</li> <li>2. Who's who of genetics and environmental determinants in ALS (Adriano Chiò)</li> <li>3. The analysis of big data: a methodological challenge (Barbara Di Camillo, UNIPD)</li> <li>4. Muscular dystrophies: a challenging playground for young researchers (Tiziana Mongini)</li> <li>5. Muscle metabolism and energy production failures (Tiziana Mongini)</li> <li>6. Central nervous system involvement in muscle disorders (Tiziana Mongini)</li> </ol>	

<b>Neuro-psychology of cognitive impairment in minor and major neurocognitive disorders</b>	<b>18 hours Credits: 9</b>
<b>Teachers:</b> Martina Amanzio , Adriano Chiò , Leonardo Lopiano, Innocenzo Rainero, Sara Palermo	
<b>Location:</b> see program	
<b>Dates:</b> see program	
<b>Program:</b> The course is aimed at: <ul style="list-style-type: none"> <li>- Let students know the neuropsychology of cognitive dysfunctions along a continuum ranging from normal aging, to minor and major neurocognitive disorders.</li> <li>- To provide a thorough neuropsychological knowledge of Mild Cognitive Impairment and cognitive frailty, Alzheimer's Disease, Frontotemporal Lobar Degeneration and Parkinson's Disease.</li> <li>- To understand the mechanisms and consequences of cognitive impairment in motor neuron disease.</li> <li>- To present the recent international guidelines to achieve the best diagnostic assessment.</li> <li>- To foster in students skills about the executive dysfunction in reduced awareness of illness using a neurocognitive approach.</li> </ul>	
Adriano Chiò	
Sept. 11, 2018 (h 14-16)	AULA via Cherasco 15, first floor
Sept. 20, 2018 (h 14-16)	AULA via Cherasco 15, first floor
Martina Amanzio	
Sept 21, 2018 (h 14-16)	AULA 12 (C.so San Maurizio 31/a)
Sept 28, 2018 (h 14-16)	AULA C (Istituto Plana, Via Plana 10)

Leonardo Lopiano  
Sept 25, 2018 (h 14-16)  
Oct 2, 2018 (h 14-16)

AULA Magna , Via Cherasco 15  
AULA Magna, via Cherasco 15

Innocenzo Rainero  
Sept 26, 2018 (h 14-16)  
Oct 3, 2018 (h 14-16)

AULA via Cherasco 15, first floor  
AULA via Cherasco 15, first floor

Sara Palermo  
Oct 4, 2018 (h 14-16)

AULA 12 (C.so San Maurizio 31/a)