

CISEF GASLINI  
Centro Internazionale di Studi e Formazione  
Germana Gaslini  
Villa Quartara, Via Romana della Castagna, 11 A  
16148 Genova - Italia

Director: Maurizio Luvizone

Provider Nazionale Accreditato ECM n. 856  
Certificazione ISO9001:2008



#### VENUE

**CISEF Gaslini** - Villa Quartara, Via Romana della Castagna, 11A - 16147 Genoa, Italy  
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#### HOW TO REACH CISEF Gaslini

**Plane:** from the International Airport Cristoforo Colombo, shuttle bus n. 100 (runs every hour) takes you to Genova Brignole railway station, where you can take bus n. 17 to Via Romana della Castagna.

**Train:** get off at Genova Brignole railway station, take bus n. 17 and get off in Corso Europa, in front of Via Romana della Castagna.

**Car:** motorway exit Genova-Nervi, take Corso Europa westwards, take the overpass to change direction and drive eastwards, pass the Hotel AC and ESSO gas station on the right, after 50 mts. turn right into Via Romana della Castagna, go straight 80 mts., enter the gate and follow the dust lane up to the parking lot.

#### REGISTRATION AND FEES

Deadline for registration: **October 16th, 2016.**

Please, register on the website <http://www.cisef.org/evento.php?IDE=2171>

#### Registration fee

€ 800 covers access to scientific sessions, coffee breaks, and lunches for five days

#### HOTEL SPECIAL RATES

**AC HOTEL** - Corso Europa, 1075 16148, Genova - Tel. 0039 010 3071180 - Fax 0039 010 3071275  
[acgenova@ac-hotels.com](mailto:acgenova@ac-hotels.com) - <http://it.ac-hotels.com>

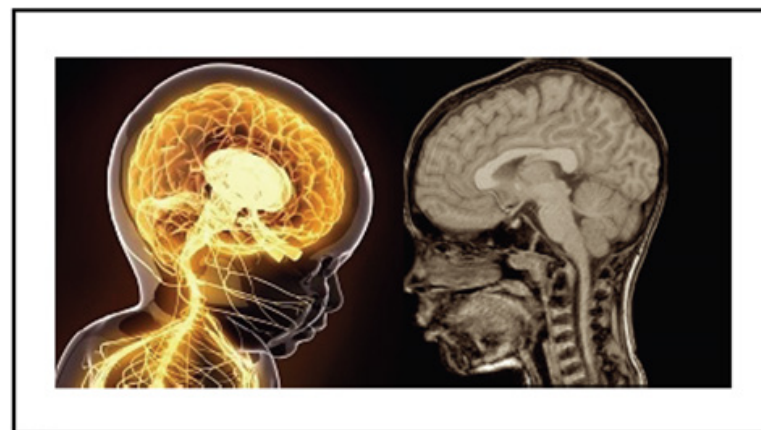
**HOTEL IRIS** - Via Gabriele Rossetti, 3-5 16148 Genova - Tel. 010 376 0703 - <http://www.hoteliris.it>

#### ENDORSED BY



## INTERNATIONAL COURSE ON NEONATAL AND PEDIATRIC NEUROCRITICAL CARE

7-11 November 2016  
Ist. G. Gaslini, Genoa, Italy



### Course Directors

Silvia Buratti  
Andrea Moscatelli  
Armando Cama  
Pietro Tuo

#### ORGANIZING SECRETARIAT

##### Lena Cosulich

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#### ACCREDITAMENTO ECM - ITALIAN CME

**Codice ECM:** 856-174425

**Crediti Assegnati:** 32,7

**Medico chirurgo** (Anestesia e rianimazione, Neonatologia, Pediatria, Neuroradiologia, Neurochirurgia, Neurologia, Neuropsichiatria Infantile, Medicina Fisica e Riabilitativa), **Infermiere Pediatrico**, **Infermiere**, **Tecnico di Neurofisiopatologia**.

**Codice ambito: 18** - contenuti tecnico-professionali (conoscenze e competenze) specifici di ciascuna professione, di ciascuna specializzazione e di ciascuna attività ultraspecialistica. Malattie rare.

# FACULTY & INFO

## FACULTY

**Aldo Amantini** - Neuromuscular Department, AOU Careggi, IRCCS Don Carlo Gnocchi, Florence, Italy

**Laura Banov** - Gaslini Children's Hospital Genoa, Italy

**Silvia Buratti** - Gaslini Children's Hospital Genoa, Italy

**Armando Cama** - Gaslini Children's Hospital Genoa, Italy

**Taeun Chang** - Children's National Washington, USA

**Arturo Chieragato** - Ospedale Niguarda Ca' Granda Milan, Italy

**Maria Roberta Cilio** - University of California, San Francisco, USA

**Paola Cogo** - Azienda Ospedaliera Universitaria Udine, Italy

**Marek Czosnyka** - Department of Clinical Neurosciences - University of Cambridge, UK

**Zofia Czosnyka** - Department of Clinical Neurosciences - University of Cambridge, UK

**Robertino Dilella** - Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico Milan, Italy

**Luca Doglio** - Gaslini Children's Hospital Genoa, Italy

**Antonello Grippo** - Neuromuscular Department, AOU Careggi, IRCCS Don Carlo Gnocchi, Florence, Italy

**Paola Lanteri** - Gaslini Children's Hospital Genoa, Italy

**Silvia Lori** - Neurophysiology Unit, Department of Neuroscience, Careggi University Hospital of Florence, Italy

**Gian Michele Magnano** - Gaslini Children's Hospital Genoa, Italy

**Sandra Magnoni** - Fondazione IRCCS Cà Granda Ospedale Maggiore Policlinico Milano, Italy

**Fabio Minicucci** - Unità INSPE, Ospedale San Raffaele Milano, Italy

**Mahendra Moharir** - The Hospital for Sick Children Toronto, Canada

**Giovanni Morana** - Gaslini Children's Hospital Genoa, Italy

**Paolo Moretti** - Gaslini Children's Hospital Genoa, Italy

**Andrea Moscatelli** - Gaslini Children's Hospital Genoa, Italy

**Marco Pallavidino** - Gaslini Children's Hospital Genoa, Italy

**Alessandro Parodi** - Gaslini Children's Hospital Genoa, Italy

**Gianluca Piatelli** - Gaslini Children's Hospital Genoa, Italy

**Luca Ramenghi** - Gaslini Children's Hospital Genoa, Italy

**Marco Ranucci** - I.R.C.C.S. Policlinico San Donato, Milan, Italy

**Chiara Robba** - Addenbrookes Hospital, Cambridge, UK

**Andrea Rossi** - Gaslini Children's Hospital Genoa, Italy

**Maria Savina Severino** - Gaslini Children's Hospital Genoa, Italy

**Nino Stocchetti** - Fondazione IRCCS Cà Granda Ospedale Maggiore Policlinico Milano, Italy

**Sandra Strazzer** - Istituto Scientifico Eugenio Medea Bosisio Parini, Lecco, Italy

**Pasquale Striano** - Gaslini Children's Hospital Genoa, Italy

**Agnese Suppiej** - MD PhD - Paediatric University Hospital Padova, Italy

**Robert Tasker** - Boston Children's Hospital, USA

**Domenico Tortora** - Gaslini Children's Hospital Genoa, Italy

**Pietro Tuo** - Gaslini Children's Hospital Genoa, Italy

## SCIENTIFIC COMMITTEE

**Silvia Buratti**

**Paola Lanteri**

**Chiara Robba**

**Agnese Suppiej**

**Andrea Moscatelli**

**Luca Ramenghi**

**Andrea Rossi**

**Robert Tasker**

## AIMS

Neonatal and pediatric neurocritical care is an evolving subspecialty that integrates neuroscience and critical care specialties. Rapid advances in knowledge and perspectives are challenging and specific training is key to develop the high level expertise required in the clinical practice.

Brain-oriented critical care involves in-depth understanding of cerebral metabolism and pathophysiologic processes that lead to secondary injury in the developing brain. Established and new brain monitoring principles, including neuroelectrophysiologic techniques, and neuroimaging assessment are essential and complementary components to clinical evaluation in the prevention and management of acute brain injury. The principles of neuromonitoring and neuroprotection can be widely applied in the heterogeneity of neurologic disorders in the neonatal and pediatric intensive care unit.

The course will include sessions on specific disorders, such as head trauma, hypoxic-ischemic encephalopathy, stroke, status epilepticus, and congenital heart disease.

The course is targeted to intensivists, neurologists, neurosurgeons, critical care nurses who wish to learn the essentials of neurocritical care in the neonatal and pediatric setting.

The course is a broad collaborative project held by skilled neonatal and pediatric intensivists, neurologists, neuroradiologists, and neurosurgeons with clinical and research expertise in neurocritical care.

## TOPICS

### General principles

Brain oriented critical care, neuroprotection, neuromonitoring.

### Neuroelectrophysiologic evaluation and monitoring

From theory to practice: EEG, aEEG, Evoked Potentials, Nerve Conduction Velocity and Electromyography.

### Neuroimaging

Head ultrasound, Transcranial Doppler, brain MR and CT: principles, normal anatomy and pathology.

### Neuromonitoring, diagnostic and therapeutic strategies in

Hypoxic ischemic encephalopathy, stroke, traumatic brain injury, congenital heart disease, refractory status epilepticus.

### Special sessions

# PROGRAM

November 7  
Monday

08.30 Registration  
09.00 Welcome address

## General Principles

Chairs: *P. Tuo, A. Moscatelli*

09.15-09.45 Opening lecture: Brain oriented critical care - *R. Tasker*  
09.45-10.15 Brain physics of brain injury - *M. Czosnyka*  
10.15-10.45 Neuroprotection in acute brain injury - *N. Stocchetti*  
10.45-11.00 Discussion  
11.00-11.30 Coffee break  
11.30-11.50 Neurologic examination in neonatal ICU - *T. Chang*  
11.50-12.10 Neurologic examination in critically ill patients. When potentially useful and when potentially dangerous - *A. Chieregato*  
12.10-12.30 Discussion  
12.30-13.45 Lunch

## Clinical Monitoring

13.45-14.05 Intracranial pressure monitoring and waveform analysis - *C. Robba*  
14.15-14.35 Cerebral blood flow monitoring and autoregulation (PRX) - *M. Czosnyka*  
14.35-15.00 Cerebral oxygenation and metabolism monitoring - *N. Stocchetti*  
15.00-15.30 Coffee break  
15.30-15.50 Multimodality monitoring in neurocritical care - *S. Magnoni*  
15.50-16.10 CSF dynamics in hydrocephalus - *Z. Czosnyka*  
16.10-16.30 Sodium balance and hyperosmolar therapy - *A. Moscatelli*  
16.30-16.50 Discussion

# PROGRAM

November 8  
Tuesday

## Neuroelectrophysiologic evaluation and Monitoring

### From theory to practice

Chairs: *A. Suppiej, P. Lanteri*

09.00-09.20 Neurophysiological monitoring in adult and pediatric intensive care - *A. Amantini*  
09.20-09.40 ABC of conventional and integrated EEG - *A. Suppiej*  
09.40-10.00 Continuous conventional and integrated EEG (cEEG) monitoring in the NICU and PICU - *T. Chang*  
10.00-10.20 Evoked Potentials (EP) - *A. Suppiej*  
10.20-10.40 Discussion  
10.40-11.10 Coffee break  
11.10-11.30 Event related potentials (ERP) - *A. Grippo*  
11.30-11.50 Nerve Conduction Velocity (NCV) and Electromyography (EMG) - *P. Lanteri, S. Lori, R. Dilella*  
11.50-12.10 Neurophysiological strategies for the diagnosis of disorders of the neuromuscular junction in children - *P. Lanteri, S. Lori, R. Dilella*  
12.10-12.30 Critical illness polyneuropathy and myopathy in PICU - *A. Grippo*  
12.30-12.50 Discussion  
12.50-14.00 Lunch

## Neuroimaging

Chairs: *L. Ramenghi, A. Rossi*

14.00-14.20 Head ultrasound: principles and normal anatomy - *G. Magnano*  
14.20-14.40 Peculiar HUS presentations in newborns - *A. Parodi*  
14.40-15.00 Transcranial Doppler - *C. Robba*  
15.00-15.20 Discussion  
15.20-15.50 Coffee break  
15.50-16.10 Normal brain anatomy and development on CT & MRI - *G. Morana*  
16.10-16.40 Brain CT & MRI: principles, pitfalls and practical issues in critically ill children - *A. Rossi*  
16.40-17.00 General pathologic findings on brain MRI: how to differentiate cytotoxic edema from vasogenic edema on MRI – how to evaluate brain hemorrhages on MRI – *D. Tortora*  
17.00-17.20 Neuroimaging after neurosurgical procedures (brain tumors, hydrocephalus, congenital anomalies, epilepsy surgery, spine surgery, etc.) - *G. Morana*  
17.20-17.40 Discussion

# PROGRAM

November 9-10  
Wednesday-Thursday

# PROGRAM

November 10-11  
Thursday-Friday

November 9th

## Update on specific disorders

### Diagnostic and therapeutic strategies Hypoxic ischemic encephalopathy

Chair: *R. Tasker*

- 08.30-09.00 The encephalopathic newborn and his lesions - *L. Ramenghi*
- 09.00-09.20 Pathophysiology of pediatric HIE - *R. Tasker*
- 09.20-09.40 MRI findings in newborns and pediatric patients - *M. Severino*
- 09.40-10.00 Update on management of neonatal HIE - *L. Ramenghi*
- 10.00-10.20 Update on management of pediatric HIE - *R. Tasker*
- 10.20-10.40 Discussion
- 10.40-11.10 *Coffee break*
- 11.10-11.30 Neurophysiology in hypothermic hypoxic-ischemic brain injury: clinical features and outcome - *A. Grippo, S. Lori*
- 11.30-11.50 Neurodevelopmental outcome in neonatal hypoxic-ischemic brain injury: the role of integrated neurophysiological approach - *A. Suppiej*
- 11.50-12.10 The prognostic role of ERP in neonatal and pediatric hypoxic-ischemic insult - *A. Grippo*
- 12.10-12.30 Discussion
- 12.30-13.40 *Lunch*

## Stroke

Chair: *M. Moharir, L. Ramenghi*

- 13.40-14.00 Neonatal stroke: pathogenesis, clinical features and diagnosis - *M. Moharir*
- 14.00-14.20 Neonatal stroke: clinical, electrophysiologic and neuroimaging correlates - *M. Cilio*
- 14.20-14.40 Suspecting sinovenous thrombosis in neonates - *L. Ramenghi*
- 14.40-15.00 Focus on pediatric stroke - *M. Moharir*
- 15.00-15.20 Update on management - *L. Banov*
- 15.20-15.40 Discussion
- 15.40-16.10 *Coffee break*
- 16.10-16.50 **Special session**  
Brain death: clinical determination and pediatric perspectives - *S. Buratti*

November 10th

## Traumatic brain injury

Chairs: *A. Cama, A. Moscatelli*

- 08.30-09.00 Physiopathology and clinical aspects of traumatic brain injury. Learning from age related differences - *A. Chiericato*
- 09.00-09.30 Neuromonitoring: review and application in TBI - *S. Magnoni*
- 09.30-09.50 Neuroradiologic assessment in TBI - *D. Tortora*
- 09.50-10.10 The prognostic role of different pattern somatosensory evoked potentials and ERP in traumatic brain injury - *P. Lanteri*

10.10-10.30

Discussion

10.30-11.00

*Coffee break*

11.00-11.20

Guidelines for management of severe TBI - *M. Pallavidino*

11.20-11.40

Learning which treatment works for severe TBI - *R. Tasker*

11.40-12.00

Neurosurgical strategies in TBI - *G. Piatelli*

12.00-12.20

Spinal cord injuries: pathology and management - *G. Piatelli*

12.20-12.40

Discussion

12.40-14.00

*Lunch*

## Congenital heart disease

### Intra and post operative and ECMO neuromonitoring

Chair: *P. Cogo*

14.00-14.20

Neuropathology in CHD newborns - *S. Buratti*

14.20-14.50

Intra and post operative neuromonitoring - *M. Ranucci*

14.50-15.10

ECMO neuromonitoring - *A. Moscatelli*

15.10-15.25

Video EEG and status epilepticus in ECMO - *M. Cilio*

15.20-15.40

MRI correlates - *M. Severino*

15.40-16.00

Discussion

16.00-16.20

*Coffee break*

16.20-17.20

Interesting and complex cases

November 11th

## Refractory status epilepticus

Chairs: *A. Suppiej, P. Striano*

08.30-08.50

Super refractory status epilepticus: pathophysiology and clinical features - *R. Tasker*

08.50-09.20

Electrophysiology - *F. Minicucci*

09.20-09.40

CT versus MRI: epilepsy related changes and diagnostic role - *A. Rossi*

09.40-10.00

Critical care management and proposal of a treatment protocol - *S. Buratti*

10.00-10.20

Discussion

10.20-10.50

*Coffee break*

## Neurorehabilitation

Chair: *P. Moretti*

10.50-11.20

Rehabilitative management - *S. Strazzer*

11.20-11.40

Clinical cases - *L. Doglio*

11.40-12.00

Discussion

12.00-12.30

Closing Lecture: Ethical issues in Neurointensive Care - *R. Tasker*

12.30-13.00

CME questionnaire