Celebrations of the 50 years of the Pavia Headache Centre
Academic Year 1970/71 - Academic Year 2020/21

From Research to Headache Care and Back

and Ottorino Rossi Award

XXXI EDITION

The event will take place in a hybrid format
(Aula Berlucchi IRCCS Mondino Foundation & videoconference)

www.mondino.it
Ottorino Rossi was born on 17th January, 1877, in Solbiate Comasco, near Como, Italy. In 1895 he enrolled at the medical faculty of the University of Pavia as a student of the Ghislieri College and during his undergraduate years was an intern pupil of the Institute of General Pathology and Histology, headed by Camillo Golgi. In 1901 Rossi obtained his medical doctor degree with the highest grades and a distinction. In October 1902 he went on to the Clinica Neuropatologica (Hospital for Nervous and Mental Diseases) directed by Casimiro Mondino to continue his studies. At the same time, he continued to frequent the Golgi Institute which was the leading Italian centre for biological research. Having completed his clinical preparation in Florence under Eugenio Tanssi, and in Munich at the Institute directed by Emil Kraepelin, he taught at the Universities of Siena, Sassari and, from 1925, Pavia. In Pavia he was made Rector of the University (serving from 1925 to 1936), and during his tenure he was instrumental in getting the buildings of the new San Matteo General Hospital completed.

Ottorino Rossi made many important scientific contributions to the fields of neurology, neurophysiopathology and neuroanatomy. These include: the identification of glucose as the reducing agent of cerebrospinal fluid, the demonstration that fibres from the spinal ganglia pass into the dorsal branch of the spinal roots, and the description of the cerebellar symptom which he termed “the primary asymmetries of positions”. Moreover, he conducted important studies on the immunopathology of the nervous system, the serodiagnosis of neurosyphilis and the regeneration of the nervous system. He was the author of major scientific works including an extensive investigation of arteriosclerosis in the brain, L’Arteriosclerosi dei Centri Cerebrali e Spinali (1906), which dealt with the development of lesions of vascular origin. He died in 1936 at the age of 59, having named the Ghislieri College as his heir. Ottorino Rossi was one of Camillo Golgi’s most illustrious pupils as well as one of the most eminent descendants of Pavia’s medico-biological tradition.

Since 1990, thanks to an initiative of the then new Scientific Director (prof. Giuseppe Nappi), the IRCCS Mondino Foundation has held an annual Ottorino Rossi Award Conference at which the award is presented to a scientist who has made an important contribution to research in the field of the neurosciences.

In the course of its 30-year history, the Ottorino Rossi Award has, on two occasions, been theme based. In the period 2010-2012, it was devoted to The Founders of Neurology, namely the three founders of the most important Italian Schools of Neurology of the twentieth century, while the awards assigned from 2017 to 2019 celebrated the Pavia Legacy. This latter series stemmed from the desire to recognise eminent researchers with strong scientific and cultural links with the city of Pavia.

Unfortunately, due to the restrictions imposed by the Covid-19 pandemic, it was not possible to stage the Ottorino Rossi Award Conference in 2020. As a result this year, 2021, sees the Award entering its fourth decade.
Rigmor Højland Jensen was born in Denmark in 1954. She obtained her MD degree at the University of Copenhagen in 1981. After completing her basic clinical and neurological training, as well as fellowships at university hospitals in the Copenhagen area, she qualified as a neurologist. She became an associate professor at the University of Copenhagen in 1997, and in 2009 a full professor of headache and neurological pain at the same University. Inspired and mentored by Professor Jes Olesen, she entered the field of headache research in the late 1980s, initially focusing mainly on tension-type headache. In 1988, she co-conducted the first epidemiological study on headache disorders based on the first International Classification of Headache Disorders (ICHD-I).

In 2001, she and Prof. Olesen together founded the Danish Headache Centre at Glostrup Hospital, and a decade later she became its director. This multidisciplinary academic centre, recipient of a Global Excellence in Health Award, has more than 20 PhD students and boasts a sizeable scientific output (80-100 publications per year). Prof. Jensen’s current research interests are headache management, CSF physiology, idiopathic intracranial hypertension and preclinical models, medication overuse headache and cluster headache. She herself has published more than 400 scientific papers in peer-reviewed journals.

Prof. Jensen has worked extensively with national and international organisations in the field of headache care, and in pre- and postgraduate education. She has supervised 28 PhD students and more than 50 undergraduate and postgraduate master’s projects.

She is a past president of the European Headache Federation, a former trustee and co-chair of the International Headache Society’s Education Committee, and a former Director of EHMTIC – an EHF-Migraine Trust congress organisation. At present she is director of the Lifting The Global Burden of Headache organisation.

In 2016 she initiated an international “Master in Headache Disorders” at the University of Copenhagen. This two-year programme has proved very successful and is continuing to attract post-graduate students, mostly neurologists, from numerous countries.

Rigmor Jensen is a leading figure in headache care and research worldwide, and has an extensive international network. She has worked steadily with politics for equal and better access to headache care globally.
1990
Vittorio Erspamer
Rome (Italy)

1991
Paolo Pinelli
Milan (Italy)

1992
Giovanni Di Chiro
Bethesda (USA)

1993
Clarence Joseph Gibbs
Bethesda (USA)

1994
David Zee
Baltimore (USA)

1995
Elio Lugaresi
Bologna (Italy)

1996
Michel Fardeau
Paris (France)

1997
Salvador Moncada
London (UK)

1998
Alain Berthoz
Paris (France)

1999
Ottar Sjaastad
Trondheim (Norway)

2000
John Timothy
Greenamyre
Atlanta (USA)

2001
Salvatore Di Mauro
New York (USA)

2002
Elio Raviola
Boston (USA)

2003
Michael Welch
Chicago (USA)

2004
François Boller
Paris (France)

2005
Jes Olesen
Copenhagen (Denmark)

2006
Stanley Finger
S. Louis (USA)

2007
Michael A. Moskowitz
Boston (USA)

2008
Patricia Smith Churchland
San Diego (USA)

2009
Stephen P. Hunt
London (UK)

2010
Vincenzo Bonavita
Naples (Italy)

2011
Cesare Fieschi
Rome (Italy)

2012
Giorgio Bernardi
Rome (Italy)

2013
Henry Markram
Lausanne (Switzerland)

2014
Emmanuele A. Jannini
L’Aquila (Italy)

2015
Roberto Crea
Hayward (USA)

2016
Richard Stanislaus
Joseph Frackowiak
Lausanne (Switzerland)

2017
Pierluigi Nicotera
Bonn (Germany)

2018
Gianvito Martino
Milan (Italy)

2019
Adriano Aguzzi
Zurich (Switzerland)
Five decades have passed since 1970, the year in which Prof. Giuseppe Nappi, then a young university lecturer, founded the Headache and Brain Circulation Center at the University of Pavia. Over the years, this center, based at the Mondino Foundation, went on to become a “Regional Center of Reference”, an important recognition in the healthcare field. In the course of this past half century, scientific knowledge in the field of headaches has made enormous strides, transforming a disorder sometimes considered the Cinderella of neurology into a topic of great scientific interest, in which discoveries have continued incessantly, leading to a series of major achievements. These include one of the most advanced nosographic classifications in medicine, the identification of specific drugs, and the development of highly innovative, complex and multidisciplinary management approaches. This scientific and healthcare revolution has mainly involved two forms of primary headache: migraine and cluster headache, both chronic and complex neurological diseases whose multiple symptoms, in addition to the head pain, reflect the involvement of multiple brain circuits. The development of valid animal models has made it possible to shed light on different aspects of the neurobiology of cranial pain. We now know, for instance, that the well-established female prevalence of migraine is due to differences in the levels of pain receptors located on the meninges that surround the brain. The discovery, in the 1980s, of a key molecule mediating head pain led to the creation of drugs (monoclonal antibodies and receptor antagonists) capable of selectively blocking its biological action. In addition, the identification of various phases in the migraine attack, together with the focus on the entire spectrum of migraine symptomatology, has allowed us to identify the structures responsible for attacks and, through the use of sophisticated neurophysiological and neuroimaging methods, made it possible to clarify the temporal sequence of their activation. In all these areas, the Pavia Headache Center has constantly played a role of primary importance. Starting from its first clinical and neurochemical studies, it has progressively expanded its horizons, both temporal and scientific, enriching its experience with nosographic classification activities, epidemiological investigations, the development of animal and human models of disease, studies involving neurophysiological and neuroimaging methods, and pharmacological trials. From the passion and enthusiasm of a small founding group of young neurologists (Giorgio Bono, Emilia Martignoni, Giuseppe Micieli, Grazia Sances and Giorgio Sandrini), a long tradition of research and healthcare, enriched over the years with new faces and new ideas, was born. The Pavia Headache Center has trained numerous headache experts, and created a network of excellence at national and European level, thereby consolidating the foundations not only of its present, but also, more importantly, of its future. In fact, this year, a representative of the great Pavia Headache School is set to take the reins of the International Headache Society. To celebrate the 50th anniversary of the Pavia Headache Center, colleagues and friends, from various parts of the world, who have contributed, together with the Pavia School, to the growth of headache science and medicine will be getting together, in person and/or virtually, at the Mondino Foundation. The event will be an opportunity to testify to the progress made and to discuss future developments with the Mondino Foundation’s younger generation, and with members of of the University of Pavia’s Department of Brain and Behavioral Sciences. This event will see the prestigious Ottorino Rossi Award, now in its 31st year, awarded to Prof. Rigmor H. Jensen (Department of Internal Medicine C, Glostrup Hospital, University of Copenhagen), a researcher of great international renown in the field of headaches. In addition, prizes will be awarded to two young researchers, in memory, respectively, of Emilia Martignoni and Paolo Rossi, two colleagues who contributed hugely to the whole scientific community, and the Mondino Foundation in particular, both as researchers and clinicians and, more important still, as people.
Friday, October 1st

8.45  Welcome
Francesco Svelto
Rector, Pavia University
President, IRCCS Mondino Foundation
Livio P. Tronconi
CEO, IRCCS Mondino Foundation
Fabio Blandini
Scientific Director, IRCCS Mondino Foundation
Giuseppe Nappi
Founder, Pavia Headache Centre

9.00  Prologue
The origins: building a solid foundation for growth
Giorgio Sandrini, Pavia

9.10  Opening Session - Condensed Lectures:
from basic and clinical intuitions
to translational neuroscience
Chairs: Maria Gabriella Buzzi (Rome),
Messoud Ashina (Copenhagen)
- Fifty years of pre-clinical advances
  Michael A. Moskowitz (Boston)
- Fifty years of clinical advances
  Jes Olesen (Copenhagen)

9.50  Chapter 1 - Neurons, vessels and hormones
Chairs and discussants: Fabio Blandini (Pavia),
Pietro Cortelli (Bologna)
- From aura to Headache: novel concepts in understanding the complexity of the process by which CSD activates meningeal nociceptors
  Rami Burstein (Boston)
- Migraine and vascular disease
  Hans-Christoph Diener (Essen)
- Role of gender and hormones in migraine
  Rossella E. Nappi (Pavia)

11.00 Break

11.10 Chapter 2 - From genetics to signaling mechanisms in migraine
Chairs and discussants: Pierangelo Geppetti (Florence), Armando Genazzani (Novara)
- Migraine and genes
  Arn van den Maagdenberg (Leiden)
- The CGRP story
  Peter J. Goadsby (London)
- Human models of migraine
  Messoud Ashina (Copenhagen)
Friday, October 1st

12.20 Chapter 3 - Biomarkers of migraine: setting the path
Chairs and discussants: Gioacchino Tedeschi (Naples), Filippo M. Santorelli (Rome)
- **Neuroimaging**
  Arne May (Hamburg)
- **Neurophysiology**
  Jean Schoenen (Liège)
- **Genetics**
  Gisela Terwindt (Leiden)
- **Epigenetics**
  Patricia Pozo-Rosich (Barcelona)

14.30 **XXXI Ottorino Rossi Award Ceremony**
Presentation of the winner
Cristina Tassorelli (Pavia)
Lecture by the winner
What about the non-migraine headaches, are they not relevant?
Rigmor H. Jensen (Copenhagen)

15.30 Chapter 4 - The future of migraine research: the Pavia School continues
Chairs: Giorgio Sandrini (Pavia), Alfredo Costa (Pavia)
- **Animal models**
  Chiara Demartini (Pavia)
  Advisor: Peter J. Goadsby (London)
- **Neurophysiological investigations**
  Roberto De Icco (Pavia)
  Advisor: Jean Schoenen (Liège)
- **Neuromodulation**
  Giuseppe Cosentino (Pavia)
  Advisor: David W. Dodick (Phoenix)
- **Neuroimaging**
  Daniele Martinelli (Pavia)
  Advisor: David Borsook (Boston)

Artificial intelligence applied to migraine research
Silvia Figini (Pavia)

17.30 "Emilia Martignoni" Memorial Award Conferred to an Italian Junior MD presented by Piera Martignoni
Saturday, October 2nd

9.00 **Treatment of migraine and cluster headache: which options?**  
Chairs: Vincenzo Guidetti, Paolo Martelletti (Rome)
- Monoclonal antibodies targeting CGRP: for whom and for how long?  
  Grazia Sances (Pavia)
- Combining preventive drugs: when enough is not enough  
  Licia Grazzi (Milano)
- Gepants in migraine: blurring the lines between acute and preventive treatment  
  Simona Guerzoni (Modena)
- Cluster headache: from neuromodulation to monoclonal antibodies  
  Gianluca Coppola (Roma)

10.30 **Treatment of migraine and cluster headache: what matters more for the patients?**  
In collaboration with AI.Ce. Group-CIRNA Foundation (30th anniversary of CIRNA)  
Chairs: Giorgio Sandrini, Grazia Sances (Pavia)

12.30 “Paolo Rossi” Memorial Award: Winner Lecture

13.00 Acknowledgements & Farewell

**Scientific Supervisor** Cristina Tassorelli  
Director of the Headache and Neurorehabilitation Research Center IRCCS Mondino Foundation, Pavia; Director of the Department of Brain and Behavioral Sciences, University of Pavia  
**Scientific Committee** Cristina Tassorelli, Roberto De Icco, Daniele Martinelli, Alessia Putorti (Pavia)
Speakers and Chairpersons

MARTA ALLENA
IRCCS Mondino Foundation, Pavia (Italy)

MESSOUD ASHINA
University of Copenhagen (Denmark)

FABIO BLANDINI
IRCCS Mondino Foundation, Pavia (Italy)

DAVID BORSOOK
Boston Children’s Hospital (USA)

RAMI BURSTEIN
Harvard Medical School, Boston (USA)

MARIA GABRIELLA BUZZI
IRCCS Santa Lucia Foundation, Rome (Italy)

GIANLUCA COPPOLA
Sapienza University of Rome - Polo Pontino, Rome (Italy)

PIETRO CORTELLI
Alma Mater Studiorum – University of Bologna Bellaria Hospital (Italy)

GIUSEPPE COSENTINO
IRCCS Mondino Foundation, Pavia (Italy)

ALFREDO COSTA
IRCCS Mondino Foundation, Pavia & University of Pavia (Italy)

PETER J. GOADSBY
King’s College, London (UK)

LICIA GRAZZI
IRCCS Neurological Institute Carlo Besta Foundation, Milano (Italy)

ROBERTO DE ICCO
IRCCS Mondino Foundation, Pavia (Italy)

ELENA GUASCHINO
IRCCS Mondino Foundation, Pavia (Italy)

CHIARA DEMARTINI
IRCCS Mondino Foundation, Pavia (Italy)

SIMONA GUERZONI
University Hospital Policlinico di Modena (Italy)

CHERUBINO DI LORENZO
Sapienza University of Rome (Italy)

VINCENTO GUIDETTI
Sapienza University of Rome (Italy)

HANS-CHRISTOPH DIENER
University Duisburg-Essen (Germany)

PAOLO MARTELLETTI
Sapienza University of Rome (Italy)

DAVID W. DODICK
Mayo Clinic, Phoenix (USA)

RIGMOR H. JENSEN
Vall d’Hebron University Hospital Barcelona (Spain)

SILVIA FIGINI
University of Pavia (Italy)

PATRICIA POZO-ROSICH
Vall d’Hebron University Hospital Barcelona (Spain)

ARMANDO GENAZZANI
Piemonte Orientale University, Novara (Italy)

GIOACCHINO SANCES
IRCCS Mondino Foundation, Pavia (Italy)

PIERANGELO GEPPETTI
University of Florence (Italy)

GIUSEPPE NAPPI
 già IRCCS Mondino Foundation, Pavia (Italy)

GIUSEPPE NAPPI
 già IRCCS Mondino Foundation, Pavia (Italy)

DANIELE MARTINELLI
IRCCS Mondino Foundation, Pavia (Italy)

ROSSELLA E. NAPPI
University of Pavia (Italy)

GRAZIA SANCES
IRCCS Mondino Foundation, Pavia (Italy)

FILIPPO M. SANTORELLI
Sapienza University of Rome (Italy)

JES OLESEN
University of Copenhagen (Denmark)

LARA MERIGHI
Al.Ce. Group Association, Ferrara (Italy)

HANS-CHRISTOPH DIENER
University Duisburg-Essen (Germany)

MICHAEL A. MOSKOWITZ
Massachusetts General Hospital, Boston (USA)

GISELA TERWINDT
Leiden University Medical Centre (Netherlands)

ARM VAN DEN MAAGDENBERG
Leiden University (Netherlands)

ARNE MAY
University of Hamburg (Germany)

JEAN SCHOENEN
Université de Liège (Belgium)

PIETRO CORTELLI
Alma Mater Studiorum – University of Bologna Bellaria Hospital (Italy)

LIVIO P. TRONCONI
IRCCS Mondino Foundation, Pavia (Italy)

GIUSEPPE NAPPI
 già IRCCS Mondino Foundation, Pavia (Italy)

LARA MERIGHI
Al.Ce. Group Association, Ferrara (Italy)
**Accreditamento ECM-CPD**

Provider IRCCS Fondazione Mondino n. 5467. Obiettivi formativi tecnico-professionali n. 18: Contenuti tecnico-professionali (conoscenze e competenze) specifici di ciascuna professione, di ciascuna specializzazione e di ciascuna attività ultraspecialistica ivi incluse le malattie rare e la medicina di genere.

Le due giornate sono accreditate in ambito ECM-CPD per le seguenti figure professionali:
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Per ottenere i crediti formativi è necessario partecipare all’intero programma e rispondere correttamente all’80% delle domande del test di apprendimento.

Sono stati preassegnati **n. 8 crediti ECM-CPD alla prima giornata** e **n. 3 crediti ECM-CPD alla seconda giornata**.

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**Other information**

**Participants Registration**
The registration is free of charge, but mandatory at the following link: courses.mondino.it/corsi_list.php. The credentials to take part in the Videoconference will be sent by e-mail. Regardless of the training credits, at the end of the meeting, it will be possible to request the certificate of attendance.

**Training office Silvia Molinari**
IRCCS Fondazione Mondino – Pavia
phone +39 (0) 382 380 299
formazione.informazione@mondino.it

**Organizing secretariat Bquadro congressi srl**
Via F.Ili Cuzio 42 - 27100 Pavia - phone +39 (0) 382 302 859
studio@bquadro-congressi.it - www.bquadro-congressi.it

**Press office Echo arte e comunicazione**
francesca.monza@echo.pv.it - armando.barone@echo.pv.it

**Registration Participants, Speakers and Chairpersons**
Enterance from Via Magenes

**Official language**
English is the official language for October 1st
Italian is the official language for October 2nd