

IRCCS MONDINO FOUNDATION
& UNIVERSITY OF PAVIA

OCTOBER
1st-2nd 2021

*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 Berlucci IRCCS Mondino Foundation & videoconference)

www.mondino.it



FONDAZIONE
MONDINO
Istituto Neurologico Nazionale
a Carattere Scientifico | IRCCS

Sistema Sanitario  Regione
Lombardia



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 Tanzi, 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 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.

Previous Winners / Ottorino Rossi Award

1990 Vittorio Erspamer <i>Rome (Italy)</i>	1998 Alain Berthoz <i>Paris (France)</i>	2005 Jes Olesen <i>Copenhagen (Denmark)</i>	2013 Henry Markram <i>Lausanne (Switzerland)</i>
1991 Paolo Pinelli <i>Milan (Italy)</i>	1999 Ottar Sjaastad <i>Trondheim (Norway)</i>	2006 Stanley Finger <i>S. Louis (USA)</i>	2014 Emmanuele A. Jannini <i>L'Aquila (Italy)</i>
1992 Giovanni Di Chiro <i>Bethesda (USA)</i>	2000 John Timothy Greenamyre <i>Atlanta (USA)</i>	2007 Michael A. Moskowitz <i>Boston (USA)</i>	2015 Roberto Crea <i>Hayward (USA)</i>
1993 Clarence Joseph Gibbs <i>Bethesda (USA)</i>	2001 Salvatore Di Mauro <i>New York (USA)</i>	2008 Patricia Smith Churchland <i>San Diego (USA)</i>	2016 Richard Stanislaus Joseph Frackowiak <i>Lausanne (Switzerland)</i>
1994 David Zee <i>Baltimore (USA)</i>	2002 Elio Raviola <i>Boston (USA)</i>	2009 Stephen P. Hunt <i>London (UK)</i>	2017 Pierluigi Nicotera <i>Bonn (Germany)</i>
1995 Elio Lugaresi <i>Bologna (Italia)</i>	2003 Michael Welch <i>Chicago (USA)</i>	2010 Vincenzo Bonavita <i>Naples (Italy)</i>	2018 Gianvito Martino <i>Milan (Italy)</i>
1996 Michel Fardeau <i>Paris (France)</i>	2004 François Boller <i>Paris (France)</i>	2011 Cesare Fieschi <i>Rome (Italy)</i>	2019 Adriano Aguzzi <i>Zurich (Switzerland)</i>
1997 Salvador Moncada <i>London (UK)</i>		2012 Giorgio Bernardi <i>Rome (Italy)</i>	



Background to the conference

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 Miceli, 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 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.

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

Jørgen Olesen (Copenhagen)

9.50 Chapter 1 - Neurons, vessels and hormones

Chairs and discussants: Fabio Blandini (Pavia),
Pietro Cortelli (Bologna)

■ The dysfunctional anatomy of migraine circuitry

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)

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

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 Al.Ce. Group-CIRNA Foundation (30th anniversary of CIRNA)

Chairs: Giorgio Sandrini, Grazia Sances (Pavia)

■ **Come prevenire l'uso eccessivo di farmaci per l'attacco**

Natascia Ghiotto (Pavia)

■ **Le strategie di gestione della cefalea a grappolo**

Marta Allena (Pavia)

■ **La telemedicina nella gestione del paziente cefalalgico**

Elena Guaschino (Pavia)

■ **Social media e rischio di fake news**

Cherubino Di Lorenzo (Roma)

■ **Il punto di vista del paziente**

Lara Merighi (Ferrara)

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 Putortì (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)

ROBERTO DE ICCO

IRCCS Mondino Foundation,
Pavia (Italy)

CHIARA DEMARTINI

IRCCS Mondino Foundation,
Pavia (Italy)

CHERUBINO DI LORENZO

Sapienza University of Rome
(Italy)

HANS-CHRISTOPH DIENER

University Duisburg-Essen
(Germany)

DAVID W. DODICK

Mayo Clinic, Phoenix (USA)

SILVIA FIGINI

University of Pavia (Italy)

ARMANDO GENAZZANI

Piemonte Orientale
University, Novara (Italy)

PIERANGELO GEPPETTI

University of Florence (Italy)

NATASCIA GHIOTTO

IRCCS Mondino Foundation,
Pavia (Italy)

PETER J. GOADSBY

King's College, London (UK)

LICIA GRAZZI

IRCCS Neurological Institute
Carlo Besta Foundation,
Milano (Italy)

ELENA GUASCHINO

IRCCS Mondino Foundation,
Pavia (Italy)

SIMONA GUERZONI

University Hospital
Policlinico di Modena (Italy)

VINCENZO GUIDETTI

Sapienza University of Rome
(Italy)

RIGMOR H. JENSEN

Glostrup Hospital (Denmark)

PAOLO MARTELLETTI

Sapienza University of Rome
(Italy)

DANIELE MARTINELLI

IRCCS Mondino Foundation,
Pavia (Italy)

ARNE MAY

University of Hamburg
(Germany)

LARA MERIGHI

Al.Ce. Group Association,
Ferrara (Italy)

MICHAEL A. MOSKOWITZ

Massachusetts General
Hospital, Boston (USA)

GIUSEPPE NAPPI

già IRCCS Mondino
Foundation, Pavia (Italy)

ROSSELLA E. NAPPI

University of Pavia (Italy)

JØRGEN OLESEN

University of Copenhagen
(Denmark)

PATRICIA POZO-ROSICH

Vall d'Hebron University
Hospital Barcelona (Spain)

GRAZIA SANCES

IRCCS Mondino Foundation,
Pavia (Italy)

GIORGIO SANDRINI

già IRCCS Mondino
Foundation, Pavia &
University of Pavia (Italy)

FILIPPO M. SANTORELLI

Sapienza University
of Rome (Italy)

JEAN SCHOENEN

Université de Liège
(Belgium)

FRANCESCO SVELTO

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

CRISTINA TASSORELLI

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

GIOACCHINO TEDESCHI

Campania University, Naples
(Italy)

GISELA TERWINDT

Leiden University Medical
Centre (Netherlands)

LIVIO P. TRONCONI

IRCCS Mondino Foundation,
Pavia (Italy)

ARN VAN DEN MAAGDENBERG

Leiden University
(Netherlands)

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:

Medico Chirurgo (Biochimica clinica, Epidemiologia, Farmacologia e tossicologia clinica, Genetica medica, Laboratorio di genetica medica, Igiene, epidemiologia e sanità pubblica, Medicina generale-medici di famiglia, Medicina fisica e riabilitativa, Medicina interna, Neurofisiopatologia, Neurologia, Neuropsichiatria infantile, Neuroradiologia, Patologia clinica-laboratorio di analisi chimico-cliniche e microbiologia), **Assistente sanitario, Biologo, Farmacista** (Farmacia ospedaliera, Farmacia territoriale), **Chimico, Fisioterapista, Infermiere, Infermiere pediatrico, Psicologo** (psicologia, psicoterapia), **Tecnico della fisiopatologia cardiocircolatoria e perfusione cardiovascolare, Tecnico di neurofisiopatologia, Tecnico sanitario di radiologia medica, Tecnico sanitario di laboratorio biomedico.**

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.**

Other information

Participants Registration

Registration is mandatory and free at the link: courses.mondino.it/corsi_list.php. The credentials to take part to 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.lli 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

Entrance from Via Magenes

Official language

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

Under the patronage of



With the unconditional support of



IRCCS Fondazione Mondino
Istituto Neurologico Nazionale
a Carattere Scientifico IRCCS

via Mondino 2
27100 Pavia
www.mondino.it