OTTORINO ROSSI" AWARD 2003

Ottorino Rossi was born on 17th January, 1877, in Solbiate, near Como. He studied at the “Collegio Ghislieri” and in 1895 enrolled at the medical faculty of the University of Pavia. In October 1902 he went on to the Centre for Mental and Nervous Diseases of Pavia directed by Casimiro Mondino. In 1926 he succeeded Camillo Golgi and was appointed rector of the University of Pavia. He was the author of major scientific works including “The Arteriosclerosis of the Nervous System” and other studies giving a new interpretation of the development of lesions of vascular origin. He died in 1936 at the age of 59, having named the “Collegio Ghislieri” as his heir.

In previous years the Ottorino Rossi Award has been conferred upon: Vittorio Ersipamer, University of Rome and “Accademia dei Lincei” (1990); Paolo Pinelli, University of Milan (1991); Giovanni Di Chiro, National Institutes of Health, Bethesda (1992); Clarence Joseph Gibbs Jr, National Institutes of Health, Bethesda (1993); David Zee, Johns Hopkins University School of Medicine, Baltimore (1994); Elvio Lugaresi, University of Bologna (1995); Michel Fardeau, Salpetrière Hospital, Paris (1996); Salvador Moncada, University College, London (1997); Alain Berthoz, UMR CNRS Collège de France, Paris (1998); Ottar Sjaastad, Trondheim University Hospital (1999); John Timothy Greenamyre, Emory University School of Medicine, Atlanta (2000); Salvatore DiMauro, Columbia University, New York (2001); Elio Raviola, Harvard Medical School, Boston (2002).

This year the IRCCS “C. Mondino Institute of Neurology” Foundation has conferred the award on Prof. K. Michael A. Welch, President and CEO of Finch University of Health Sciences - The Chicago Medical School. The jury was composed of: Vittorio Costi, Director of the Department of Neurology and Special Therapy, IRCCS “C. Mondino Institute of Neurology”, University of Pavia; Cesare Fieschi, President of the Italian Stroke Forum; Gian Franco Gensini, Coordinator of the SPREAD Group; Domenico Inzitari, Coordinator of the Cerebrovascular Diseases Study Group; Cesare Meloni, Dean of the Faculty of Medicine, University of Pavia; Arrigo Moglia, Director of the Department of Neurological Sciences, University of Pavia; Giuseppe Nappi, Scientific Director of IRCCS “C. Mondino Institute of Neurology”, Pavia; Stefano Perini, President of the Society of Hospital Neuroscience; Nicola Rizzutto, President of the Italian Society of Neurology; Roberto Schmid, Rector of the University of Pavia and President of IRCCS “C. Mondino Institute of Neurology”, Pavia, Secretary of the Award; Giuseppe Micieli, Director of the Stroke Unit, IRCCS “C. Mondino Institute of Neurology”, Pavia.

Kenneth Michael Anthony Welch earned his medical degree at the University of Bristol School of Medicine in the United Kingdom. In the early 1970s, he moved to the United States, where, at the Baylor College of Medicine, Houston, Texas, he held several positions – Research Associate, Instructor, Director of the Division of Neurometabolism, Assistant and Associate Professor in the Department of Neurology and Associate Professor in the Department of Cell Biology – before also becoming, in 1976, Chief of Neurology at the Ben Taub General Hospital. In 1981, he relocated to Michigan to become the founding Chair of the Department of Neurology at Henry Ford Hospital (HFH), now the Henry Ford Hospital and Health Sciences Center. As Vice President of Academic Affairs at HFH, he founded the Health Sciences Center and was instrumental in the negotiations leading to its affiliation with Case Western Reserve University (Cleveland, Ohio). During his time at HFH, Prof. Welch was Director of the NMR Research Center, Principal Investigator of two NIH-funded centers for stroke and headache research, and the clinician with overall responsibility for the NINDS tissue plasminogen study, the first to establish the effectiveness of thrombolysis in acute stroke. Prof. Welch continues to serve NIH, chairing several oversight committees for clinical trials. He has also served as professor at both the University of Michigan and Case Western Reserve University, and as adjunct professor of neurology at Oakland University and at the University of New Mexico.

Prof. Welch spent the period 1998 to late 2002 at the University of Kansas School of Medicine, where he served as Senior Associate Dean of Research and Graduate Studies, and most recently as Vice Chancellor of Research and President of the Research Institute.

He has been President and CEO of Finch University of Health Sciences - The Chicago Medical School (North Chicago, Illinois) since December 2002.

Prof. K.M.A. Welch is a world-renowned researcher whose career has focused on the study of brain function with particular reference to the neurobiological bases of general phenomena involved in producing central nervous system (CNS) dysfunction and damage. His studies, which represent an outstanding contribution particularly in the field of cerebrovascular disease and migraine, range from the development of experimental models to the implementation of new methods for in vivo investigation (laboratory and functional neuroimaging); he has also contributed to the redefining, against a new physiopathological background, of some of the most important chapters of clinical neurology, such as ischemic stroke, migraine headaches, and other functional disorders of the CNS.
The focus of his interest in the early 1970s was the hemodynamic and metabolic correlates of subarachnoid hemorrhage (SAH) and acute hypoxia/ischemia induced in experimental animals, and he was able to contribute not only to understanding of the neurovascular mechanisms underlying post-SAH vasospasm, but also to knowledge of the role of neurotransmitter release in the progression of cerebral infarction. These studies on cerebral hemodynamics and its metabolic and biochemical correlates also include important observations on cortical excitability during the course of convulsive phenomena and neurodegenerative disorders, which have very important therapeutic implications.

Prof. Welch’s investigation of in vivo intracellular pH and high-energy phosphate metabolites during experimental myocardial and cerebral ischemia using 31-P nuclear magnetic resonance was both original and significant. Developing this approach, his group has demonstrated beyond doubt that significantly reduced peak phosphocreatine (PCR) levels, together with increased levels of inorganic phosphates and normal levels of ATP, can be found during migraine with aura attacks. This finding, in the absence of pH changes, excludes the hypothesis that ischemic changes take place during the migraine attack, which instead reproduces the spectroscopic pattern of spreading depression.

Similarities and differences between migraine phenomena and cerebral ischemia have also been investigated from a biochemical (CSF, GABA and cyclic-AMP levels) and circulatory (platelet activation and related phenomena during the course of migraine and in patients with TIAs and stroke) perspective. Over the last decade Prof. K.M.A. Welch’s research has advanced through further investigations of the clinical aspects, physiopathology, and diagnostic and therapeutic implications of cerebrovascular disorders and stroke. He has clarified platelet-activating factors, the role of endothelins and the significance of the acid-base cellular shift in the pathophysiology of ischemia. The metabolic effects of mild hyperthermia have also been studied in global ischemia and recirculation. More recently, the application of diffusion and T2-weighted magnetic resonance imaging to the in vivo investigation of stroke in humans has yielded important contributions of particular value in the development of neuroprotective strategies.

The Ottorino Rossi Award for 2003 is bestowed on Prof. K.M.A. Welch in acknowledgment of his contribution to understanding of the general phenomena (cortical, neurovascular, biochemical) underlying cerebral ischemia, migraine headaches and other CNS disorders. This vast body of experimental and clinical research has greatly contributed to the most important advances in neuroscience in recent years, including the development of applied technology (MEG and MRI techniques) and the implementation of new therapeutic strategies.