



Charles Rodolphe Brupbacher Foundation

The
Charles Rodolphe Brupbacher Prize
for Cancer Research 2009
is awarded to

Dr. Nubia Muñoz

for her contributions
to the epidemiology of cancer causation by chronic infections,
in particular the etiology of cervical cancer.

The President
of the Foundation

Mrs. Frédérique Brupbacher

The President
of the Scientific Board

Prof. Dr. Klaus W. Grätz

Laudatio

D. Maxwell Parkin

Dr Muñoz career began as a pathologist in her native Colombia, in the department of her mentor Professor Pelayo Correa. Her professional interest soon moved to the field of epidemiology, however, and she received her training in the discipline at the US National Cancer Institute, and Johns Hopkins University. Her research first focussed on gastric cancer, with a series of studies following up the observations of Lauren on the differing aetiology and geographic distribution of intestinal and diffuse types of gastric carcinoma. This work took her to the International Agency for Research on Cancer (IARC) in Lyon in the 1970's, where she worked with Dr Callum Muir and Dr Nick Day, before taking charge of her own research unit in the mid 1980's. Her main research interest at that time was in oesophageal cancer, and particularly the reasons for its striking geographic distribution. Work with Nick Day in Iran in the pre-revolutionary days was followed by a series of studies in high-risk areas of China, including an elaborate intervention study with micronutrients (β -carotene, riboflavin and zinc). Her group also conducted a series of studies on the epidemiology of hepatocellular carcinoma in Asia and Africa.

But, even by this time, Dr Muñoz had an ongoing interest in cancer of the uterine cervix. The epidemiology of this cancer had been much studied in the 1960's and 70's, and, in a review in 1976, Dr Munoz concluded *“The evidence suggests that a venereally transmitted virus and/or hormonal factors are involved in the etiology of cervical cancer”*. This was before the work of Prof Harald zur Hausen in the early 1980's, detecting the presence of human papilloma virus in tumour tissue (for which he was later awarded the Nobel prize). At that time, there was some scepticism concerning the role of HPV infection. In an important review, published in 1988, Dr Munoz wrote: *“The human papillomavirus has emerged over the past decade as the leading candidate to be the sexually transmitted aetiological factor in cervical cancer. Although it appears that papillomavirus types 16 and 18 are associated with a higher risk of advanced cervical neoplasia, most of the evidence comes from studies which do not satisfy basic epidemiological requirements, and are*

therefore difficult to interpret..... On the basis of the existing studies, one is forced to conclude that, while experimental data suggest an oncogenic potential for HPV, the epidemiological evidence implicating it as a cause of cervical neoplasia is still rather limited”.

From her unit at IARC Dr Muñoz began to lead a major programme of research. This began with an international series of case-control studies using modern laboratory techniques that demonstrated that HPV infection by certain genotypes of HPV is one the strongest cancer risk factors ever found. Subsequent work produced precise estimates of relative risks that permitted defining the HPV genotypes that had to be targeted for prevention. At the same time, the International Biological Study of Cervical Cancer (IBSCC) identified the HPV types associated with tumours occurring in different parts of the world. By 1999, it was possible to assert that HPV infection should be considered a necessary cause of cervix cancer. Dr Muñoz convinced the IARC that the role of HPVs should be evaluated in one of the authoritative Monograph series on carcinogenicity evaluation. In 1995, HPVs 16 and 18 were classified as “Group 1, Human Carcinogens”. This monograph was an important stimulus to the development of HPV tests with the aim of improving traditional cervical cancer screening, which had hitherto relied upon cytology examination using the Pap test. Perhaps even more importantly, the Monograph gave pharmaceutical companies the evidence needed to take the financial risks in developing and field-testing candidate HPV vaccines. The end result is that there are now two new fronts for cervical cancer prevention: HPV vaccination and improved screening with HPV tests, all originated from Dr Muñoz’ vigorous and relentless leadership on the epidemiology front grounded on the pioneer work by zur Hausen.

Dr Muñoz retired from her post at IARC in 2002, but has continued to play a major role as Emeritus Scientist, National Cancer Institute of Colombia, acting as advisor to vaccine companies in conducting relevant trials the results of which have influenced policy with respect to immunisation worldwide. She has been the recipient of many awards and prizes, including the Premio Atlántico de Investigación del Cáncer (2004), The Outstanding Epidemiologist Award (Society for Epidemiologic Research, 2006), and the International Epidemiological Association’s Sir Richard Doll’s Prize in Epidemiology (2008).

Dr. Nubia Muñoz

Curriculum vitae and Publications



Place of birth	Cali, Colombia
Home address	24, Quai Fulchiron 69005 Lyon (France) Telephone: +33 478429021
Current position	Emeritus Professor, National Cancer Institute, Bogota, Colombia Visiting Scientist, Catalan Institute of Oncology, Barcelona, Spain

Graduate and Postgraduate Education

1958 - 1964	University of Valle Faculty of Medicine Cali, Colombia Degree: Doctor of Medicine and Surgery
1964 - 1967	University of Valle Faculty of Medicine Cali, Colombia Degree: Board of Pathology
1967 - 1968	Fellow in the Department of Pathology National Cancer Institute National Institutes of Health Bethesda, MD, USA