

## In Memoriam: René Raúl Drucker-Colín (1937–2017)

Oscar Prospero Garcia<sup>1</sup> · Raúl Aguilar-Roblero<sup>1</sup>

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Dr. René Raúl Drucker-Colín, Ph.D., was one of the most distinguished scientists from México in the last 50 years, and he was born in México City, México, May 15, 1937 and passed away also in México City past September 17, 2017.

Dr. René Drucker-Colín was born and raised in México City, Mexico. He graduated from Psychology at the Universidad Nacional Autónoma de México (1962), obtained his master (Psychophysiology) at the University of Illinois (1964) and the Ph.D. (Physiology) at the School of Medicine in Saskatchewan, Canada (1971). He obtained worldwide recognition for his contributions to sleep research, neurophysiology, and neurochemistry. Later, he was also recognized for his studies on transplants of brain tissue to induce functional recovery after experimental damage and its use

in Parkinson's disease. He also pioneered the use of magnetic fields for the functional recovery in a rodent model of Parkinson's disease, and in the use of nicotine for improvement in patients with depression. His scientific achievements made him a recipient of several awards such as the National Science and Arts Award and the National University Award, both from México. He also obtained international awards, including the Kalinga Award from the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Medal of the Andres Bello Order from the Government of the Republic of Venezuela, among others. In 2010 he was recognized by his pioneer studies on sleep by the Sleep Research Society. In 2005, he became a Professor Emeritus at the División de Neurociencias from the Instituto de Fisiología Celular, at the Universidad Nacional Autónoma de México.

His interest in sleep research begins in 1964 when he joined the group of Dr. Raúl Hernández-Peón in 1964, at the Instituto de Investigaciones Cerebrales in México City. Due to the premature death of Hernandez-Peon, in 1968, he temporarily interrupted his work on the role of cholinergic forebrain system on REM sleep mechanisms [1–3], while he obtained his Ph.D. ant Canada. His contributions to sleep research include the first evidence on the role of proteins and neuropeptides in REM sleep regulation, which contributed to the concept of sleep homeostasis. In particular, he demonstrated the relation of polypeptides (he called them proteins) from the brain stem and REM sleep [4–8] and that vasoactive intestinal polypeptide (VIP) induces REM sleep [9–11]. He also demonstrated the role of REM sleep in the regulation of neuronal excitability [12–15] and was the first one to show that at certain levels of sensorial stimulation there is an increase in REM sleep [16–19]. He also was the first to use the expression of the c-Fos protein, a trans-synaptic activity marker, to study the brain regions activated during REM

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✉ Oscar Prospero Garcia  
opg@unam.mx

Raúl Aguilar-Roblero  
raguilar@ifc.unam.mx

<sup>1</sup> Facultad de Medicina and Instituto de Fisiología Celular, Universidad Nacional Autónoma de México, Mexico City, Mexico

sleep [20, 21]. He also proposed that previous wakefulness had an impact on the brain network activated during REM sleep, a phenomenon he called somnoprnt [22, 23].

René was the mentor to most of the current sleep researchers in Mexico. He was an enthusiastic scientist and a great promoter of science. As a deep thinker of scientific problems the National University, he was appointed as provost of Research. He also promoted the creation of the Minister of Science, Technology, and Innovation of the government of Mexico City, a post he held at the time of his death. At the personal level, he was a fitness enthusiast and a compassionate human being.

Dr. René Drucker-Colín will be sorely missed in the sleep community and his friends worldwide. His tireless efforts to enthuse his students and colleagues for the study of the sleep enigma will also be missed.

Personally, we feel his physical absence live us with a great sorrow, but also with great enthusiasm for continuing spreading his teaching and findings in science as much as continuing the line of research he has legated us.

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