

Short Biography

Dr. Miguel Nicolelis is the Anne W. Deane Professor of Neuroscience and Professor of Neurobiology, Biomedical Engineering and Psychology at Duke University. He is also Co-Director of Duke Center for Neuroengineering; and Co-Founder and Scientific Director of the Edmond and Lily Safra International Institute for Neuroscience of Natal. Dr. Nicolelis is a native of Sao Paulo, Brazil where he received his M.D. and Ph.D. in Neurophysiology from the University of Sao Paulo.

Dr. Nicolelis has devoted his career to the search for the physiological principles that govern the interaction of large populations of neurons in behaving animals. Although Dr. Nicolelis is best known for his study of Brain Machine Interfaces (BMI) for neuroprosthetics in human patients and non-human primates, he is also developing an integrative approach to studying neurological and psychiatric disorders by recording neuronal ensemble activity across different brain areas in genetically modified mice. Dr. Nicolelis believes that this approach will allow the integration of molecular, cellular, systems, and behavioral data in the same animal, producing a more complete understanding of the nature of the alterations associated with these disorders.

Dr. Nicolelis' research has been highlighted in MIT Review's Top 10 Emerging Technologies. He was named one of Scientific American's Top 50 Technology Leaders in America in 2004 and has twice received the DARPA Award for Sustained Excellence by a Performer. Other honors include the Whitehead Scholar Award; Ruth and Morris Williams, Jr. Faculty Research Prize; Whitehall Foundation Award; McDonnell-Pew Foundation Award; Duke University Thomas Langford Lectureship Award; the Ramon y Cajal Chair at the University of Mexico and the Santiago Grisolia Chair at Catedra Santiago Grisolia. In 2007, Dr. Nicolelis was honored as an invited speaker for the Nobel Forum at the Karolinksa Institute in Sweden. More recently he was awarded the International Blaise Pascal Research Chair from the Fondation de l'Ecole Normale Supérieure and the 2009 Fondation IPSEN Neuronal Plasticity Prize. He has authored over 150 manuscripts, edited numerous books and special journal issues, and holds three U.S. patents.

Recent Publications

Fitzsimmons N, Drake W, Hanson T, Lebedev M, Nicolelis M. Primate reaching cued by multichannel spatiotemporal cortical microstimulation. *J Neurosci* 27: 5593-5602, 2007.

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- Li Z, O'Doherty JE, Hanson TL, Lebedev MA, Henriquez CS, Nicolelis MAL. Unscented Kalman Filter for Brain-Machine Interfaces. *PLoS One* 4: e6243, 2009.
- Petermann T, Thiagarajan TC, Lebedev MA, Nicolelis MA, Chialvo DR, Plenz D. Spontaneous cortical activity in awake monkeys composed of neuronal avalanches. *Proc Natl Acad Sci.* 106: 15921-15926, 2009.
- O'Doherty JE, Lebedev MA, Hanson TL, Fitzsimmons NA, Nicolelis MAL. A brain-machine interface instructed by direct intracortical microstimulation. *Front. Integr. Neurosci.* 3: 1-10, 2009.
- MacDonald CJ, Meck WH, Simon SA, Nicolelis MAL. Taste-Guided Decisions Differentially Engage Neuronal Ensembles across Gustatory Cortices. *J. Neurosci.* 29:11271-82, 2009.