THE AWARD

OF THE

PIUS XI GOLD MEDAL

2016

Prof. Mariano Sigman

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The aim of the Pontifical Academy of Sciences, which was founded on 28 October 1936 by the Holy Father Pius XI, is to honour pure science, wherever this may be found, to ensure its freedom, and to support the research essential for the progress of applied science.

On 28 October 1961, on the occasion of the 25th anniversary of the foundation of the Pontifical Academy of Sciences, the Holy Father John XXIII established the Pius XI Gold Medal in honour of the founder of the Academy. The medal should be awarded to a young scientist who has already gained an international reputation.

The Council of the Academy unanimously decided to award the "Pius XI Gold Medal" for the year 2016 to

Prof. MARIANO SIGMAN

in recognition of his great merits as a scholar and the important contribution of his research to scientific progress.

PIVS · XI · PONTIFEX · MAXIMVS · FVNDATOR

PONTIFICIA · ACADEMIA · SCIENTIARVM

MARIANO SIGMAN

A.D.
MMXVI

MARIANO SIGMAN

BIOGRAPHICAL DATA

Full Name: Mariano Sigman

Work Address:
Universidad Torcuato Di Tella
Laboratorio de Neurociencia
Avenida Figeroa Alcorta, 7350, CABA, Buenos Aires
1428 Argentina

Scientific Discipline:
Neuroscience, Experimental Psychology, Physics

Date of Birth: 21 October 1972

Place of Birth: Buenos Aires, Argentina

Wife and Children: Married to Claire Landmann; Noah and Milo

Academic Qualifiations:
Universidad de Buenos Aires Graduate in Physics (1997)
Rockefeller University, PhD in Neuroscience (2002)

Current Professional Activity:
Professor, Universidad Torcuato Di Tella, Buenos Aires, Argentina

Honours:
Mariano was awarded a Human Frontiers Career Development Award, the Argentinean National Prize of Physics, the Young Investigator Prize of "College de France" (France), The IBM Scalable Data Analytics Award and is a Scholar of the James S. McDonnell Foundation.

BRIEF ACCOUNT OF SCIENTIFIC ACTIVITY

Mariano Sigman was born in Argentina and grew up in Barcelona, Spain. He obtained a master degree in physics at the University of Buenos Aires and a PhD in neuroscience in New York. He moved to Paris to investigate decision making, cognitive architecture and consciousness. In 2006 he founded the Integrative Neuroscience Laboratory, at the University of Buenos Aires, an interdisciplinary group integrated by physicists, psychologists, biologists, engineers, educational scientists, linguists, mathematicians, artists and computer scientists.

His lab has developed an empirical and theoretical approach to decision making, with special focus on understanding the construction of confidence and subjective beliefs. Many aspects of his investigation rely on data mining and computational tools on massive corpus of human behavior. Recently, he has progressively shifted his research to understand how current knowledge of the brain and the mind may serve to improve educational practice. Many of the projects conduct are developed at schools throughout the country and he is extending these investigations on cognitive development to hundreds of thousands of children through the One Laptop Per Child (OLPC) framework.

Throughout his career he developed numerous research interactions with representatives of different domains of human culture including, musicians, professional chess players, mathematicians, magicians, visual artists and chefs. He has performed a career in arts with exhibits presented in museums and galleries in Argentina, Mexico, Brazil, US, Japan, New York, Austria...

SELECTED PUBLICATIONS

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Gilbert, C.D. & Sigman, M. Brain States: Top-Down Influences in Sensory Processing. *Neuron* 54, 677-696, doi:10.1016/j.neuron.2007.05.019 (2007).

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Sigman, M. & Cecchi, G.A. Global organization of the Wordnet lexicon. *Proceedings of the National Academy of Sciences* 99, 1742-1747 (2002).