# Scientific Seminar on Computational Neuroscience

Madrid, 14 Febrero de 2018
Instituto Cajal,
Av. Doctor Arce, 37.
28002 Madrid – Spain

National Science Foundation
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## Programme

16:30 – Welcome and presentation of Cajal Institute *(Juan José Garrido, Cajal Institute, CSIC, Spain)*

16:45 – **Rafael Yuste**

17:15 – **José Carmena**: "*Mechanisms of neural activity exploration and consolidation underlying neuroprosthetic skill learning*"

17:45 – **Maria Neimark-Geffen**: "*Excitatory-inhibitory circuits in auditory processing*"

18:15 – **Hernan Makse**: "*Cracking the locomotion code in C. elegans*"

18:45 – Questions & Answers

19:15 – End of seminar

**Rafael Yuste (Columbia University, New York)**
https://blogs.cuit.columbia.edu/rmy5/
Rafael Yuste is Professor of Biological Sciences and Neuroscience at Columbia University. He was born in Madrid, where he obtained his MD at the Universidad Autónoma. After a brief period in Sydney Brenner's laboratory in Cambridge, UK, he performed Ph.D. studies with Larry Katz in Torsten Wiesel's laboratory at Rockefeller University and was a postdoctoral student of David Tank at Bell Labs. In 1996 he joined the Department of Biological Sciences at Columbia University, where he is Full Professor. In 2005 he became HHMI Investigator and co-director of the Kavli Institute for Brain Circuits and in 2014 Director of the Neurotechnology Center at Columbia. Yuste is interested in the endogenous function of neural circuits, using both mouse visual cortex and Hydra vulgaris as experimental preparations.

**Jose Carmena (University of California, Berkeley)**
https://www2.eecs.berkeley.edu/Faculty/Homepages/carmena.html
Jose M. Carmena is the Chancellor's Professor of Electrical Engineering and Neuroscience at the University of California-Berkeley, and Co-Director of the Center for Neural Engineering and Prostheses at UC Berkeley and UCSF. His research program in neural engineering and systems neuroscience is aimed at understanding the neural basis of sensorimotor learning and control, and at building the science and engineering base that will allow the creation of reliable neuroprosthetic systems for the severely disabled. Dr Carmena received the B.S. and M.S. degrees in electrical engineering from the Polytechnic University of Valencia (Spain) in 1995 and the University of Valencia (Spain) in 1997. Following those he received the M.S. degree in artificial intelligence and the Ph.D. degree in robotics both from the University of Edinburgh (Scotland, UK) in 1998 and 2002 respectively. From 2002 to 2005 he was a Postdoctoral Fellow at the Department of Neurobiology and the Center for Neuroengineering at Duke University (Durham, NC).

**Maria Neimark-Geffen (University of Pennsylvania, Philadelphia)**
https://geffenlab.weebly.com/maria.html
Maria is interested in the way the brain encodes information about the world around us and how our perception is shaped by our emotional state and experience. She combines computational and biological approaches to study the mechanisms behind dynamic auditory perception, memory and learning. Maria first got interested in systems neuroscience through her undergraduate thesis under mentorship of John Hopfield at Princeton University, in which she explored the mechanics of whisking in rats. She studied texture encoding in the somatosensory system with Christopher Moore at MIT during her first two years of graduate school at Harvard. She completed her Ph.D. in the laboratory of Markus Meister at Harvard University, where she discovered a novel retinal circuit for processing moving images. After her Ph.D., she was a fellow at the Center for Physics and Biology at Rockefeller University, where she worked first in collaboration with the Laurent laboratory on temporal processing in the olfactory system, and next under mentorship of Marcelo Magnasco, exploring the dynamics of natural sounds. She has joined Penn in 2011, and has enjoyed building a cutting edge laboratory that explores neuronal mechanisms of auditory processing.

**Hernan Makse (Levich Institute and Physics Department, City College of New York)**
http://www-levich.engr.ccny.cuny.edu/webpage/hmakse/
Hernán Makse currently serves as Professor of Physics at City University of New York, wherein he is responsible for the Complex Networks Lab at the Levich Institute. He holds a PhD degree in Physics from Boston University. He has been author of numerous publications on the theory of complex systems at the interface of physics, biology and social sciences.

**For further information, please contact to:** neuron@aei.gob.es