

Curriculum Vitae Santiago Canals

Degree: 2003 doctoral degree in Neuroscience at Universidad Complutense de Madrid

Education and positions:

- 2003 – 2004 Postdoc at Hospital Ramón y Cajal in Madrid, Spain
- 2005 – 2008 Max Planck Institute for Biological Cybernetics in Tübingen, Germany
- 2009 Institute of Biomedical Research Alberto Sols in Madrid, Spain
- Since 2009 Group leader at the Instituto de Neurociencias in Alicante, Spain
- Since 2010 Director of the Functional Magnetic Resonance Unit at the Instituto de Neurociencias in Alicante, Spain
- Since 2013 Associate member of the Centre for Cognitive and Neural Systems (cCNS) at The University of Edinburgh, UK
- Since 2015 Director of the Cellular and Systems Neuroscience Department at the Instituto de Neurociencias in Alicante, Spain

Role in the Project:

Santiago Canals' research focuses on long-range networks dynamics during memory formation and drug addiction, having contributed important findings on functional reorganization of neuronal networks triggered by local synaptic plasticity. Major characteristics of his lab are the strong interdisciplinary ground and state-of-the-art technology utilization. The group is pioneering the concomitant application of fMRI with electrophysiological recordings and deep brain electrical microstimulation in rodents. This experimental set up allow them to study functional and effective connectivity in vivo, construct functional maps of synaptic and network plasticity and investigate the influence of neuromodulatory systems on the brain's functional structure. Applying this technology they are reporting strong evidences in support of local synaptic mechanisms regulating information flow in global brain networks (Canals et al. 2008, 2009; Álvarez-Salvado et al. 2013; Moreno et al. 2015).

Selected publications:

- Cosa A, Moreno A, Pacheco-Torres J, Ciccocioppo R, Hyytiä P, Sommer WH, Moratal D, Canals S. Multi-modal MRI classifiers identify excessive alcohol consumption and treatment effects in the brain. *Addict. Biol.* 2016, doi: 10.1111/adb.12418
- Moreno A, Morris RG, **Canals S**. Frequency-dependent gating of hippocampal-neocortical interactions. *Cereb. Cortex*, 26(5):2105-14, 2016.
- Reis S, Hu Y, Babino A, Andrade JA, **Canals S**, Sigman M, Makse H. Avoiding catastrophic failure in correlated networks of networks. *Nature Physics*. 10:762, 2014.
- Martínez-Martínez MA, Pacheco J, Borrell V, **Canals S**. Phenotyping the central nervous system of the embryonic mouse by Magnetic Resonance Microscopy. *Neuroimage* 97:95-106, 2014.
- Álvarez-Salvado E, Pallarés V, Moreno A, **Canals S**. Functional MRI of long-term potentiation: imaging network plasticity. *Philos. Trans. R. Soc. Lond. B.* 369:1152-68, 2013.